

MACEDONIAN VERBAL MORPHOLOGY

A Structural Analysis

Mark J. Elson

Slavica Publishers, Inc.

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PREFACE

This study was undertaken over ten years ago as the result of a long-standing interest not only in Macedonian, but in theoretical morphology and, more generally, the issue of explanatory adequacy. The focal point of my interest was the potential relevance to morphological analysis of linguistic change as a source of evidence for synchronic structure. My purpose in describing Macedonian verbal morphology was to offer an analysis in which claims were made explicit, and discussed in an attempt to justify them on the basis of diachronic phenomena. Using such phenomena, the significance of which had been argued in Kiparsky 1968a and elsewhere, I wanted to concern myself in a serious way with the assignment of meaning to form, i.e., not merely to assert, in the traditional manner, that the word-level units of a language — in this instance, a Slavic language of the East-Balkan subgroup — could be divided in a certain way, but to show that there was reason to do so or, at least, to consider doing so.

My objective required greater attention to detail than had been typical of preceding descriptions, in which the purpose was practical, i.e., presentation of the facts. The result was a relatively complex piece of work. In view of this, the reader should be aware that mine is not, primarily, an analysis for newcomers to the system, Slavist or other, but an analysis for those already conversant with it who have an interest in theoretical morphology, which has been neglected in the dominant linguistic traditions (i.e., Bloomfieldian and Chomskyan) of this country. Therefore, although prior knowledge of the data is not necessary in the strict sense, it is helpful. This does not mean that my analysis cannot be used as an introduction to Macedonian verbal morphology, but only that the facts as such are more immediately accessible in descriptions which present them not, as I do, to probe the usefulness of linguistic change in synchrony, and, in conclusion, to present a system for which psychological reality can be argued, but merely to make them available. Several relatively uncomplicated descriptions exist, including Lunt 1952 and Elson 1977 in English, Koneski 1967 in Macedonian, and Usikova 1967 in Russian. For those who, my comments notwithstanding, wish to use the analysis of this study as an introduction to the system, there is no need to read more than the second chapter, which is self-contained, and presented in familiar enough terms to be

accessible, with occasional consultation of the first chapter for terminology, to linguists. They will find only that, in contrast to other descriptions, mine is more comprehensive. For those who share my interest in morphological analysis, the remaining material will, I hope, be of equal relevance and concern.

A final word: although this study attempts to justify synchronic structure on the basis of evolutionary evidence, it is not, itself, a history. It does not, that is, attempt to trace the morphological evolution of the system, but only to use aspects of it which seem relevant. My intention is to undertake a history of the verbal system as a companion to this study. I must therefore note, lest it appear unmotivated, that the decision to undertake synchronic analysis first, even though based on diachronic evidence, was necessary because diachronic analysis cannot begin without synchronic termini. A history, in other words, presupposes knowledge of the system in question at, minimally, two periods. Without such knowledge to provide points of reference, systemic change cannot be defined.

I should like to express my gratitude to colleagues at the University of Virginia for their willingness to wait patiently. I am also grateful to Wayles Browne, whose ever constructive, pertinent, and informed criticism was of the greatest value to me in revising my work and in considering alternatives to my proposals. I assume all responsibility for the final form of the analysis and for any errors or inconsistencies which remain.

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CHAPTER 1

PRELIMINARIES

1 Introduction

This monograph is a study of the verbal system of Contemporary Standard Macedonian,¹ the literary language of the Socialist Republic of Macedonia, one of the six federal divisions of present-day Yugoslavia. Like previous studies,² this one attempts to provide a comprehensive description of the corpus. Unlike them, however, it aims not only to describe the corpus, but to justify the descriptive apparatus it imposes on the basis of systemic phenomena. Thus, it goes beyond previous studies, which present no justification for the claims implicit in them, by offering a description for which psychological reality can be argued.³

2 Descriptive Framework

In the tradition of morphological studies, this one assumes the existence of three formal units which express, or represent, meaning: *morpheme*, *stem*, and *word*.⁴ The interpretation of these units as they pertain to the description of Macedonian verbal morphology offered in this study reflects a number of assumptions on meaning, form, and their relationship, with which we begin.⁵

2.1 Assumptions 1-5: Meaning

1. Meaning functions either to *denote* or to *modify*.

radical meaning:⁶ meaning which functions to denote;

grammatical meaning: meaning which functions to modify.

2. Among the primitives of radical meaning are *event*, *participant*, and *attribute*.

3. Grammatical meaning is expressed by semantic units which characterize events and their participants *relationally* (i.e., with respect to each other), or *nonrelationally* (i.e., with respect to inherent attributes).

category: the semantic unit of grammatical meaning;

person:⁷ the category which characterizes participants of narrated events relationally with respect to those of speech events;

number: the category which characterizes participants of narrated events nonrelationally with respect to *quantity*;

gender: the category which characterizes participants of narrated events nonrelationally with respect to attributes *other than quantity*;

tense: the category which characterizes narrated events relationally with respect to speech events;

mode: the category which characterizes narrated events relationally with respect to participants of speech events;

taxis: the category which characterizes narrated events relationally with respect to other narrated events;

status: the category which characterizes narrated events relationally with respect to the participants of other narrated events;

aspect: the category which characterizes narrated events nonrelationally with respect to their termini;

resultativity: the category which characterizes narrated events nonrelationally with respect to their outcome;

affiliation: the category which characterizes narrated events nonrelationally with respect to part of speech.

4. The semantic content of categories is not contributed directly, but via other units which represent them, and have meaning of their own.

feature: the semantic unit representing categories;

[F]: the notation for a feature F.

5. Features regularly contribute the meaning of their category to the forms they define, and may contribute their own meaning as well.

[+F]: the notation for a feature which contributes its own meaning as well as that of its category;

[-F]: the notation for a feature which contributes categorial meaning only;

marked: the status of a form with respect to a feature F if F is positively specified;

unmarked: the status of a form with respect to a feature F if F is negatively specified;

opposition: the relationship defined by the specifications of a feature;

[+F]/[-F]: the notation for an opposition;

opposed: the status of forms with respect to a feature F if there are forms which are [+F] as well as forms which are [-F];

unopposed: the status of forms with respect to a feature F if all such forms are [+F] or all such forms are [-F].

We have assumed the standard division of meaning on the basis of its function into *radical*, which is essentially denotative, or referential, in nature (i.e., represents the segmentation of reality imposed by native speakers), and *grammatical*, which is nonreferential, but qualifies or restricts radical meaning, and is therefore modificational.⁸ At present, there is no comprehensive theory of radical meaning; nor will we make any attempt to articulate one beyond the assumption that such meaning subcategorizes reality in terms of the cognitive primitives *event*, *participant*, and *attribute*, resulting in the *form classes* of Bloomfieldians, and the *parts of speech* of others. Following tradition, we describe such meaning via translations, or glosses. In contrast, we treat grammatical meaning more formally, in terms of the conception of it which evolved in the work of the Linguistic Circle of Prague and, in particular, that of Roman Jakobson. Accordingly, our assumptions define a framework in which categories represented by binary features are the systemic source of grammatical meaning, with negatively specified features making no contribution to meaning other than that of their category.⁹

2.2 Assumptions 6-11: Form

6. Realizationally, there are two types of morpheme: those constituted by segments, and those not so constituted.

overt morpheme: a morpheme constituted by segments;

zero morpheme: a morpheme not constituted by segments; a significant absence of sound;

string: the realization of a segment or sequence of segments.

7. Segments within overt morphemes may exhibit more than a single string.

morpheme variant/allomorph: one of the realizations of a morpheme having at least one segment with more than a single string.

8. Allomorphic relationships are formalized as units of the structure X/Y , where X and Y are different realizations of the same segment in variants of a morpheme.

alternation: a unit of the structure X/Y ;

exponent: a member of the complex X/Y ; i.e., X or Y .

9. Exponents may be associated with attributes of the word-level forms which exhibit them.

patterned: exponents which are associated with phonological and/or grammatical (i.e., nonidiosyncratic) attributes of the word-level forms which exhibit them.

nonpatterned: exponents which are associated with word-level units as such, not with attributes of them shared with other word-level units.

10. Only one exponent of X/Y has lexical status (i.e., appears in the lexical entry of the linguistic unit it

characterizes).

underlying exponent: in an alternation, the exponent with lexical status;

derived exponent: in an alternation, the exponent with nonlexical status;

underlying level: the level of representation at which each segment of a constituent exhibits its lexical realization;

surface level: the level of representation at which each segment of a constituent exhibits its derived realization.¹⁰

11. Exponents of the surface level are generated from those of the underlying by rules of the form $X \rightarrow Y/A$, where X represents underlying exponents, Y represents derived, and A the environments in which Y occurs.

Assumptions six and seven expand the notion of morpheme in the usual manner to include the notions of *morpheme variant* or *allomorph*, and that of *significant absence of sound*, i.e., the so-called *zero morpheme* or allomorph. These additional notions are well established, and require no comment. The eighth assumption expresses the widely held view that allomorphic relationships exist independently of the morphemes which exhibit them, and must therefore be formalized in terms of the constituents of morphemes (i.e. segments), not morphemes as such (e.g., *i/a* formalizing the allomorphic relationship of *ring/rang*, *sing/sang*, etc. in English). Assumption nine adds the notion of *pattern*, i.e., the association of exponents with attributes common to the forms which exhibit them (e.g., the association of *a* in *ring/rang*, *sing/sang*, etc. with [+past]), as a result of which the attributes take on the status of an *environment*. With the tenth assumption, we adopt the generative position that there are only two significant levels of morphological representation: *underlying*, or lexical, and *derived*, or surface, related by a set of rules which, in the jargon of generative theory, map instances of the former onto those of the latter. The underlying representation of a segment is identical to its derived representation except in segments with alternation, where underlying and derived representa-

tions may differ since one and only one exponent of an alternation has underlying status. The stipulations that, in segments with alternation, one exponent is generated from the other and that, in segments without alternation, the underlying representation is identical to the derived one eliminate the possibility of *absolute neutralization* (i.e., the occurrence in underlying representations of units which *never* appear in derived), and mean that the underlying representations posited or implied in this study are far less abstract than those possible in principle.¹¹

2.3 Assumptions 12-16: Meaning and Form

12. Radical meaning is represented by stem-level units as well as morphemes; grammatical meaning is normally represented only by morphemes.¹²

morpheme: a minimal unit of meaning;

radical morpheme: a minimal unit of meaning expressing an event, participant, or attribute;

grammatical morpheme: a minimal unit of meaning expressing a category or categories and associated features;

verbal morpheme: a radical morpheme expressing an event;

nominal morpheme: a radical morpheme expressing a participant;

adjectival morpheme: a radical morpheme expressing an attribute of participants;

adverbial morpheme: a radical morpheme expressing an attribute of events;

word: a minimal unit of sentence structure, constituted by a radical component to which a grammatical component may be united endocentrically;¹³

stem: the radical component of a word-level unit, constituted minimally by a radical morpheme to which grammatical morphemes may be united endocentrically;

lexicon: the inventory of stem-level units;

verbal stem: a unit of lexicon expressing a narrated event, and constituted by a radical morpheme as well as grammatical morphemes expressing nonrelational categories relevant to events;¹⁴

verbal form: a minimal unit of sentence structure expressing a narrated event, and constituted by a verbal stem and grammatical morphemes expressing relational as well as nonrelational categories.

13. The nonradical portion of word-level units is available for the representation of grammatical meaning. The grammatical meaning represented is a function of the number of segments available, their realizations, and the distribution of realizations within the relevant paradigmatic unities.

14. Grammatical morphemes restricted to marked forms express not only the categorial meaning common to the words exhibiting them, but the meaning contributed by the feature or features representing the categorial content as well.

15. The derived exponent of an alternation X/Y may represent the grammatical meaning common to forms exhibiting it.

linkage: the relationship which may exist between the derived exponent of a patterned alternation X/Y and the grammatical meaning common to the forms exhibiting it;

functional alternation: an alternation in which the derived exponent is linked.

16. Functional alternations are characteristic only of radical morphemes.

The twelfth assumption defines the relationship between units of meaning and units of lexicon. In this regard, it distinguishes between the stem, which is essentially a unit of radical meaning — i.e., an endocentric complex with a radical morpheme as its head — and the morpheme, which is not uniquely associated with either type of meaning, radical or grammatical. It also provides definitions of *verbal*

stem and *verbal form* in terms of the categorial content of grammatical morphemes. These units (i.e., verbal stem and form) have been assumed for analytic and descriptive purposes in all previous studies of Macedonian verbal morphology, but have hitherto been undefined, or defined without explicit reference to the type of grammatical meaning they incorporate. Both units express an event, but the stem is a unit of lexicon, and so expresses nothing more. Like all stems, it is an endocentric complex with a radical morpheme, which need not be verbal, as head. Thus, it may exhibit grammatical morphemes, but only those expressing categories which characterize narrated events nonrelationally (e.g., *-en-*, expressing aspect in English), and therefore yield a unit which still, in essence, expresses nothing more than an event (e.g., *redde*n in English, with *red-* as its head, modified nonrelationally by *-en-*). The event modified by other categories yields what is traditionally termed in studies of the Macedonian verbal system and the verbal systems of the other Slavic languages a *verbal form*, i.e., a word-level unit expressing an event (e.g., *reddened* in English, with *redde*n+ as its head, modified by *-ed*, which we assume to express the relational category of tense).

Assumptions thirteen and fourteen are concerned with the representation of grammatical meaning. They presuppose the ability of speakers to divide word-level units into radical and nonradical portions. The latter are available for representation of grammatical meaning. We have made no assumptions on the strategies used by speakers in assigning grammatical meaning to form,¹⁵ but we have assumed that, however the assignment is implemented, it is limited by the number of nonradical segments, their realizations, and the distribution of realizations within paradigmatic entities. Thus, for example, the representation of grammatical meaning in English verbs is restricted by the virtual absence of segments beyond the verbal stem. Such meaning is imparted contextually and syntactically, but not, for the most part, morphologically. Where segments are available (e.g., in the form with terminal *s*), their meaning is determined by the paradigmatic relationships of the word-level forms in which they occur (e.g., the meaning of terminal *s*, which is determined by a paradigm including one form with *s* and a second without it; thus, *read*, *reads*; *sing*, *sings*; etc.). Strings restricted to unmarked forms, or occurring in marked as well as unmarked, express categorial meaning

exclusively since that is the only meaning common to forms exhibiting them. Thus, the terminal segment in English *reads*, if associated with the category of person, represents categorial content only, signalling that the form in which it occurs is compatible with *some* qualification of participants. It does not, however, specify a qualification (e.g., [+speaker]) because the form in which it occurs is characteristic of contexts unmarked for person. Here we should emphasize that we are distinguishing between the meaning contributed to forms by *categories*, and that contributed by *features*. This distinction is not evident, and may not be present, in Jakobson's grammatical studies (1984) or those of other members of the Prague School. It is nevertheless justified because unmarked forms are not *devoid* of meaning with respect to the categories which define them, but only *unspecified*. Thus, for example, forms expressing the category of tense signal, and therefore mean, that *some* relationship exists between the speech event and the narrated one. In marked forms the relational meaning is specified (e.g., by [+past], signalling that the narrated event is anterior to the speech event); in unmarked, it is not, and must therefore be inferred from context.

The fifteenth assumption specifies what may be termed the *role* of exponents in alternations, and the sixteenth limits this role to radical morphemes. Together, they express the view dating at least to the work of Baudouin de Courtenay (1894) that exponents may not only be associated with an *environment*, but be *linked* to, and thus representative of grammatical meaning expressed by the forms in which they occur.¹⁶ This meaning is *overlaid*; i.e., expressed in addition to the fundamental meaning of the morpheme, represented by all of the segments which constitute it, including the ones with realizations which are linked. We have assumed that only one exponent of an alternation, the derived exponent (e.g., *a*, which we assume to be derived in English *ring/rang*, *sing/sang*, etc.), may express such meaning (e.g., [+past] in English *rang*, *sang*, etc.). This interpretation, absent in the work of Baudouin de Courtenay, who went no further than the claim that alternations may be functional, follows from the status of the radical morpheme as a unit expressing denotative meaning, from which we infer that one realization of each such unit must be semantically denotative *in its entirety*, i.e., represent only the radical content of the morpheme (e.g., *ring* in English *ring/rang*).

Thus, the exponent of an alternation appearing in the lexical entry of a morpheme, i.e., the underlying exponent, must be devoid of overlaid meaning. It follows that such meaning is expressed by derived exponents, if at all.

2.4 Evidence

In addition to the assumptions we have already considered, there is another, which underlies virtually all of the organizational hypotheses on which the description in this study is based:

The evolution of a language formalized as innovations relating its contemporary state to previous states is a source of evidence for synchronic structure although the implications of evolution may not be unambiguous, and may change, in part at least, according to the theoretical framework within which the analysis is implemented.

Like the other assumptions we have made, this one is not new. It is implicit in all studies, regardless of theoretical orientation, which make reference to ongoing change in the form of innovations attested generally or in the speech of learners, but not officially sanctioned. Such innovations, typically used to demonstrate that certain attributes of a system are productive, constitute evolutionary, or diachronic, evidence in the technical sense, although they are usually presented as synchronic evidence because they are observable within the context of a contemporary system. In this country, the full significance of linguistic change for synchronic description was, for the most part, unappreciated until attention turned from description *per se* as the goal of linguistic analysis to description as a reflection of linguistic competence. This change in the emphasis of American linguistics was primarily a result of the generative challenge to the Bloomfieldian tradition, which guided American linguists for thirty-five years. Perhaps the earliest reference in generative literature to the relevance of change is Kiparsky 1968a:174, where the author states:

What we need...is a window on the form of linguistic competence that is not obscured by factors like performance, about which next to nothing is known. In linguistic change we have precisely such a window.

In morphological analysis, the competence to which we need access is the set of generalizations with which native speakers operate in the classification (i.e., paradigmatic organization) and division (i.e., syntagmatic organization, or constituent structure) of forms, with the latter subsuming identification of:

1. the number of slots in word-level forms;
2. the contribution to meaning of these slots;
3. the slots which comprise the stem;
4. the strings which manifest slots;
5. the meanings of these strings;
6. the allomorphic relationships existing among these strings; and
7. the status of exponents in alternations reflecting these relationships.

However, neither classification nor division is possible in a principled way exclusively on the basis of synchronic data because word-level forms (i.e., the starting point of morphological analysis) are always compatible with more than one interpretation, paradigmatically and syntagmatically. This in itself would be of no consequence if we had sufficient knowledge of the factors relevant in the formulation of generalizations by learners during acquisition of the corpus. With such knowledge, we could predict the interpretations of a corpus which fall within the range of those used by speakers, assuming, as we do, that there is a range; in other words, that speakers differ somewhat in their treatment of the corpus, the differences reflecting the existence of data compatible with two or more interpretations entailed by the factors which determine the form and substance of permissible generalizations. But we do not have sufficient knowledge of these factors, which means that we, unlike learners, cannot treat the corpus directly. We must therefore treat it indirectly, through data from which structure can be inferred, i.e., through data which *presuppose* partition and division in contrast to members of the corpus construed statically, which do not since, in principle, they can be treated as unrelated and indivisible wholes. The evolution of a language formalized as sets of innovations

relating successive contemporary states of it provides such data. We must, therefore, briefly consider the nature of morphological innovation.

2.4.1 Innovation in Morphological Systems and Its Use in Synchronic Analysis

With respect to *observable result* (i.e., the output of grammars; what can be established from the comparison of word-level units in a corpus C_2 to the units of which they are reflexes in an earlier corpus C_1), morphological systems attest two fundamental types of innovation traditionally termed *analogical*:¹⁷

A. *incremental*, in which there is a change in the *number* of units reflecting:

1. a change in the inventory of radical meanings;
2. a change in the inventory of grammatical meanings or in their combinatorial capabilities.

B. *modification*, in which there is a change in the realization of units reflecting:

1. a change in constituent structure;
2. a change in allomorphic relationships.

New or modified word-level units of C_2 typically exhibit a well-defined relationship to the membership of C_1 ; i.e., they are constituted by strings which were available in it combined in new linear arrangements. We must therefore assume that morphological innovation presupposes, and is a function of, the strings and patterns of concatenation in terms of which C_1 was analyzed by native speakers. But patterns of concatenation can exist only within *subsets* of word-level units. Accordingly, we must assume that morphological innovation is also a function of these subsets, traditionally termed *domains* in diachronic analysis. Incremental innovation increases the membership of such subsets; modification renders the membership more uniform.

On the basis of these observations, we conclude:

1. that morphological innovation reflects, and is therefore a source of evidence for, the syntagmatic and paradigmatic generalizations with which native speakers operate;
2. that there are two *mechanisms* of morphological innovation associated with *each* of its results:¹⁸

A. *extension*, the result of which is:

a. *incremental*, reflecting the extension of a stem-level or word-level constituent structure to create new units of that level;

b. *modification*, which is:

morphemic, reflecting the extension of a constituent, constituent structure, or morpheme to forms the etyma of which did not attest it but are compatible with it; or

morphophonemic, reflecting the extension of an allomorphic relationship to such forms.

B. *elimination*, the result of which is:

a. *incremental*, reflecting the elimination of stem-level or word-level units;

b. *modification*, which is:

morphemic, reflecting the elimination of a constituent from forms the etyma of which attested it; or

morphophonemic, reflecting the elimination of an allomorphic relationship from such forms.

Thus, we have four types of innovation in all: *incremental extension*, *incremental elimination*, *modification* *exten-*

sion, and *modificational elimination*. With regard to its use in synchronic analysis, each is evidence for paradigmatic organization to the extent that the sets within which it was implemented can be established, and the attributes common to their members identified. In cases where the members of a paradigmatic unity are complex (i.e., themselves paradigmatic unities), something can also be inferred of the hierarchical interrelationship of attributes with classificatory significance. Each is also evidence for syntagmatic organization since it yields new combinations of existing strings. The comparison of new strings to old provides a basis for the identification of morphemes, itself the basis for the analysis of constituent structure and allomorphic relationships.

To illustrate these generalizations on a small scale, we will consider data, somewhat simplified, from the verbal system of Contemporary Standard Polish, a well-studied Slavic language. The corpus comprises forms traditionally identified as *present*, expressing in addition to the radical meaning 'be' and the category of tense, the categories of person and number. The forms which concern us, given below as Table 1, are from three periods, identified as P_1 , P_2 , and P_3 , with P_3 the most recent, representing the literary norm, *sg.* abbreviating *singular*, and *pl.* abbreviating *plural*. We begin by noting that there is no "procedure" for the use of contemporary forms which reflect innovation, and so no order in which they should or must be considered. Nor can the analysis of syntagmatic and paradigmatic organization proceed independently, although they are frequently described in this manner for convenience, because the semantic content compatible with a string is a function of its distribution, which, in part, is a function of the paradigmatic properties of the set of word-level units exhibiting it, while

Table 1: Present Tense of 'be' in Polish

	P_1	P_2	P_3
1sg.	<i>jeśm</i>	<i>jem</i>	<i>jestem</i>
2sg.	<i>jeś</i>	<i>jeś</i>	<i>jesteś</i>
3sg.	<i>jest</i>	<i>jest</i>	<i>jest</i>
1pl.	<i>jesmy</i>	<i>jeśmy</i>	<i>jesteśmy</i>
2pl.	<i>jeście</i>	<i>jeście</i>	<i>jesteście</i>
3pl.	<i>są</i>	<i>są</i>	<i>są</i>

paradigmatic organization may, in part, be implemented on the basis of constituent structure. Strategically, however, it is useful to establish the boundary between stem and *desinence* (i.e., the portion of a word available to represent grammatical meaning) as a point of reference for further analysis. We therefore begin with consideration of syntagmatic organization. In this regard, it is significant that several of the contemporary forms appear to be the result of an innovation in which *jest*, historically restricted to the third person singular, was combined with strings occurring to the right of *j* in P_2 . This innovation, to which we return shortly, undoubtedly reveals the boundary separating stem from desinence, which we assume to precede *e*; thus, 1sg. *j-em*, etc. in P_2 ; 1sg. *jest-em*, etc. in the contemporary language.

Before we proceed, it should be emphasized that, although comparison of contemporary forms to establish recurring partials consistently associated with semantic content (i.e., implementation of the strategy traditional in morphological analysis regardless of theoretical orientation) is compatible with the boundary we have posited, it provides no justification for boundaries other than the assumption that the recurrence of correlations between form and meaning is relevant in the division of word-level units. This assumption is reasonable and necessary, since recurrence as a basis for the association of form with meaning is the only apparent alternative to a natural (i.e., nonarbitrary) association, which has been discounted since the time of Saussure. Nevertheless, recurrence as such is of no help in analysis because we have no definition of it, a fact which is generally ignored although noted several decades ago by Pike:¹⁹

...At present, we have no criterion to tell us...how similar in form...(and) meaning items must be before we can be certain that they represent utterances of the same morpheme (1947:159).

Over forty years later, we still have no criterion. Even if we did, it would be of little value in the absence of a theory of paradigmatic organization, on which the potential for association of form with meaning depends. Accordingly, we cannot use recurrence in the identification of morphemes unless we wish to rely on an *a priori* interpretation of it (e.g., the inter-

pretation of Nida 1949, and that implicit in virtually every study of a morphological system undertaken in pregenerative as well as generative frameworks). The use of units reflecting change provides an alternative because it does not require a formal definition of recurrence, just the assumption that similarities in form and meaning between new units and old are not accidental, but a result of the recombination of strings available to successive generations of native speakers — strings which can be established, if only tentatively, through the comparison of new units with old. The element of speculation is by no means absent since there are no procedures for deciding which units of two diachronically related corpora should be compared, or what the implications of a comparison are. And although the establishment of correspondences between two such corpora may produce little disagreement, the resulting inferences may well be vulnerable to dispute because they are a function of theoretical framework and individual differences in the interpretation of the data. Nevertheless, the range of possibilities is greatly reduced because, whatever the inferences, they must be compatible with the data of more than a single corpus.

Returning now to the Polish data, we note that the contemporary forms of 'be' also suggest two modificational innovations in desinential strings:

1. elimination of *ś* in the first person singular; and
2. elimination of *ś/s* in the remaining forms.

These changes are evidence for the existence of a morpheme subsuming the sibilant segment at least, and imparting the meaning *nonspeaker*, i.e., the semantic content shared by the second persons and the first person plural, all of which make reference to at least one participant other than the speaker (e.g., the first person plural, which makes reference to the speaker and at least one participant other than the speaker). Thus, we assign *ś/s* and its reflex *ś* to a morpheme expressing the category of person represented by the feature [nonspeaker].²⁰ In the absence of other diachronic evidence, we are unable to go further syntagmatically, and so can do no more than list the issues, which include the extent of the morpheme to which *ś* is assigned, and the possibility of further division within the desinence (i.e., division within the strings *my* and *cie*). We are reminded, therefore, that use of change in synchronic analysis

is not a *solution*, but an *approach* to the problems inherent in the analysis of a contemporary corpus. This is true not only because the evaluation of change and its implications is subjective to some extent, but also because innovations are not made-to-order, meaning that, even if there were no subjectivity in the evaluation of change, we could not be certain the inventory of innovations provided a basis for the inference of *every* generalization with which native speakers operate. Thus, using change, we are able to infer *something* of structure, not *everything*.

However, the implications of the data we are considering are not yet exhausted. We have so far assumed that the six forms in question (i.e., 1sg., 2sg., 3sg., 1pl., 2pl., and 3pl.) constitute a paradigmatic unity, following standard procedure. The innovation we have treated is of no use in attempting to verify this assumption because there is no reason to think that individual morphemes are vulnerable to classification, as stem-level and word-level units are. Thus, the elimination of *ś* in the first person singular and of *ś/s* in the remaining forms tells us nothing about paradigmatic organization. But the innovation with which we began (i.e., the innovation resulting in the appearance of *jest* in forms which did not inherit it), and on the basis of which we established the boundary between stem and desinence does.

Some have seen this innovation as morphophonemic in nature, claiming elimination of the allomorphic relationship *jest/j* in favor of *jest*. However, there is good reason to question this interpretation. As a concomitant to the elimination of *jest/j*, desinential strings in the present of 'be' became *movable*. They could therefore occur independently of the stem, preceding it (e.g., *tyś jest* in the second person singular, with *ś*, the post-vocalic realization of *eś*, preceding *jest* and enclitic to *ty*, a personal pronoun), which meant the new forms were, syntagmatically, (nonpersonal form - (movable) desinence).²¹ This constituent structure has always been a peculiarity of *all* verbs in forms expressing past tense (e.g., 2sg. *prosił* alternating with *tyś prosił* in the past of *prosić* 'ask').²² Hence, there is little doubt that what appears to have been an elimination of realizational differences (i.e., the allomorphic relationship *jest/j*) was, in fact, a leveling of differences in constituent structure between the past tense generally and the present of the verb 'be'. The structural attribute uniting them was, and remains, the desinential portion of word-level units (i.e., 1sg. *-em*, 2sg. *-eś*, etc.)

which, in forms expressing present tense, was unique to 'be' (i.e., did not occur in the present tense forms of other verbs; cf. 1sg. *proszę*, 2sg. *prosisz*, etc. from the present tense of *prosić*). Historically, however, these strings were movable only in the past. We may assume, therefore, that among word-level units defined by the desinential strings in question, there was a modificational extension of the morphemic type in which the constituent structure of the past, i.e., {nonpersonal form - (movable) desinence}, replaced the one inherited by the present of 'be', yielding new units with nonpersonal *jest*; e.g., 1sg. *jest-em*, 2sg. *jest-ś*, etc. Thus, we may assume that, within the conjugational unit, word-level forms were classified at least on the basis of the presence versus absence of movable desinences. But we can go further since the units with respect to which greater similarity evolved were themselves complex, i.e., aggregates of forms, and thus indicative of paradigmatic unities. Each such aggregate included six word-level units which shared what may be termed *formational meaning* (i.e., meaning defining events without reference to participants) — in this instance, tense. We may therefore also infer the existence of the six-member paradigms based on tense characteristic of the handbooks, and which we took as our point of departure in presenting forms of 'be'.

2.4.2 Concluding Remarks

In view of the importance in contemporary linguistics — especially American and, in particular, Bloomfieldian — of the distinction between *synchrony* and *diachrony*, it should be emphasized in conclusion that the notion of synchrony is *not* compromised by the use of historical phenomena as evidence for the claims synchronic description reflects. The use of such phenomena is justified by the fact that a corpus is constituted not only by forms which were available to learners, but by forms which they have created as well. In this sense, so-called synchronic corpora are inherently diachronic, containing forms attested earlier and forms which are unique to it. Those unique to it are evidence for the generalizations with which native speakers operate, and, as long as the corpus does not change vis-à-vis the forms in question, for generalizations in terms of which subsequent generations of speakers interpret it. This claim, central to our approach, does not require us to assume that analyses are passed from generation to generation, or that learners

perform the equivalent of historical analysis in the process of acquisition, but only that an analysis implied by innovation, and thus justified for the generation of speakers in which its result was first attested, is a potential, although not necessary, analysis for speakers of subsequent generations, at least as long as the corpus undergoes no further innovation which would imply a change in analysis. Although we cannot be certain of the extent to which such analyses continue to be used, they are significant because they are the only analyses for which systemic evidence is available.

We must also comment on *division* and *classification*, the primary tasks of morphological analysis. In the generative period of American linguistics, neither has been recognized as worthy although both have been undertaken, if only because they cannot be avoided. The low esteem in which they are held, and their association with Bloomfieldian, or pregenerative — sometimes called *taxonomic* — linguistics is probably a reflection of the failure of American linguistics before 1960 to be concerned with justification, i.e., to be concerned with anything but division and classification *per se* rather than as part of the linguistic competence of native speakers. This approach, well-exemplified in morphological analysis by Nida 1949, merits the criticism it elicited. Nevertheless, we may claim with equal justification that, in their rejection of the anti-mentalistic approach characteristic of most, but not all (e.g., Pike), Bloomfieldians, generativists went too far in assuming that taxonomy itself was the problem. Seeking broad generalizations and pattern, many failed to realize that the bases for the classification and division of forms *are* generalizations — generalizations, in fact, of the most fundamental kind, without which linguistic and other corpora would remain lists of unrelated items. Of course, they continued to divide and classify, as all linguists must, but their analyses of word-level forms were typically restricted to the allomorphic relationships attested in constituent morphemes, i.e., to the *result* of division and classification since such relationships cannot be identified until at least some syntagmatic and paradigmatic organization has been established. This organization was assumed, as if obvious and, in any event, of secondary importance. As a result, our knowledge of the structure of word-level units and the principles which regulate it has remained modest. Such knowledge must be based on the analysis of data in which there is an attempt to support division and classifica-

tion with evidence. This study of Macedonian verbal morphology is offered as an instance of such analysis. Its focus is division and classification, but not, in the Bloomfieldian tradition, as an end.

3 Format

This study is implemented in two parts: a survey of the verbal morphology of Macedonian (Chapter 2), followed by discussion of the assumptions which underlie the descriptive framework of the survey (Chapter 3). The analysis is based on data from a single source — Tošev 1970 (i.e., *Pravopis na makedonskiot literaturni jazik*) — an orthographical dictionary in which verbal forms prescribed for the literary language are specified in sufficient number so that those not included in the entries can be inferred with reasonable certainty.²³ This reference provides a uniform corpus reflecting what we can presume to represent the knowledge of educated speakers of the standard literary norm.²⁴

3.1 Abbreviations Used in This Study

A	aspect indicator
C	consonant
E	extender
M	mode indicator
N	number indicator
P	person indicator
R	result indicator
S	status indicator
T	tense indicator
V	vowel
X	taxis indicator
AL	alternating
EX	extended conjugation
NA	nonalternating
SF	suffixed
US	unsuffixed
UX	unextended conjugation
Af.	affiliation
As.	aspect
Mo.	mode
Nu.	number
Pe.	person

Re.	result
St.	status
Te.	tense
Tx.	taxs
aj.	adjective
ar.	aorist
av.	adverb
cl.	circumstantial
dl.	distanced
fm.	feminine
if.	imperfective
ip.	imperfect
iv.	imperative
mc.	masculine
np.	nonpast
nt.	neuter
no.	noun
pa.	past
pc.	participative
pe.	personal
pl.	plural
pr.	present
pt.	participle
sg.	singular
sp.	speaker
sv.	stative
un.	unspecified

Notes

¹Henceforth, *Contemporary Standard Macedonian* is shortened to *Macedonian*.

²Previous studies include Lunt 1951, Lunt 1952, Koneski 1967, and Usikova 1967. Lunt 1951 and 1952 present the same analysis in essence, differing only in the amount of commentary, with 1951 providing a somewhat more detailed explanation of the relationship between the descriptive apparatus it imposes and the one generally in use at that time. Hence, in the present study, references to 1951 are restricted to the explanatory material. Otherwise, we refer only to 1952.

³In referring to the *justification of claims*, we have in mind those claims relating to the segmentation and classification of Macedonian verbal forms, not those relating more generally to the organization of linguistic systems, which is a topic beyond the scope of this study. With regard to the latter, we too must make assumptions, which we specify in the following section.

We cannot be certain that the authors of previous studies — especially Lunt in view of his Jakobsonian orientation — were unconcerned with the internalized grammars of native speakers, but, in the absence of commentary to the contrary, it is fair to assume that they relied less on the implications of systemic phenomena than on well-established methodologies designed, perhaps, to yield analyses compatible in some ill-defined sense with linguistic competence. An analysis was justified implicitly insofar as it was made on the basis of these methodologies, but the methodologies themselves were based on a priori assumptions, and so do not provide a legitimate point of reference for the justification of hypotheses.

⁴For general discussion of these units and issues of morphological analysis, see Nida 1949, Matthews 1974, and Bybee 1985.

⁵The assumptions we make are not offered as a formal theory of morphology, although they provide the basis for one. They are included only to help in the evaluation of the conclusions we reach, which reflect them. Each assumption is followed by the terms and notations, with definitions, which it entails. There is brief discussion at appropriate intervals.

⁶The term *lexical* is also commonly used to refer to denotative meaning.

⁷Here we list and define the categories assumed to be those which constitute the grammatical system expressed by Macedonian verbal stems and forms. With the exception of mode and affiliation, they are those of Friedman 1977, the most recent study of them. Justification for mode and affiliation will be considered in our discussion of the system.

⁸In essence, this is the division assumed by Sapir (1921), among others. See Contini-Morava 1984 for discussion.

⁹Note that we have followed Jakobson (1984:44-45) in adopting the distinction *relational* versus *nonrelational*. Jakobson, however, restricts the distinction to the narrated event, defining *designators* as units of grammatical meaning which characterize narrated items inherently, and *connectors* as those which characterize them relationally. Units of grammatical meaning which involve the speech event are termed *shifters*.

¹⁰Thirty one units, all segmental, are assumed for both levels of representation in Macedonian: *l, e, a, o, u, p, b, f, v, m, t, d, s, z, c, dz, n, r, l, k, g, š, ž, č, dž, ĺ, ñ, j, k, g, and x*. Derived representations of word-level forms also exhibit stress, which is generally antepenultimate. If narrowly transcribed, they also exhibit several units in addition to those with which we will operate. For discussion of Macedonian phonetics, see Lunt 1952:9-25.

Radical morphemes and verbal stems cited in this study, with glosses, appear in the appendices to Chapter 2. Note the following conventions: 1. Radical morphemes cited in isolation are preceded and followed by -, e.g., *-greb-*, *-nos-*, *-tres-*. 2. Prefixes cited in isolation are followed by -, e.g., *po-*, *do-*, *za-*, *pre-*. 3. Suffixes cited in isolation are preceded and followed by - if they are nonterminal; if terminal, they are cited only with preceding -, e.g., *-n-*, *-e-*, *-a-*, *-š-*. 4. Radical morphemes which do not occur unprefixes are preceded by °, e.g., *°čn-*. 5. Verbal stems are followed by +, e.g., *nos+*, *greb+*. 6. Boundaries internal to stems are marked by -, e.g., *gled-uv+*, *do-nos+*. 7. Morphemes, stems, and word-level units appear in derived representation except segments exhibiting automatic, i.e., phonetically conditioned, alternation, which are transcribed with the underlying exponent. This convention is relevant for two alternations:

1. *t/∅, d/∅* (i.e., dental stop with its absence);
2. *p/b, t/d*, etc. (i.e., voiceless obstruent with voiced).

Each alternation distinguishes a prevocalic exponent, which is underlying, from a nonprevocalic, which is derived. In *t/∅* and *d/∅*, the prevocalic exponent is consistently the dental. In alternations of voiceless obstruent with voiced, the prevocalic exponent varies from morpheme to morpheme. For more detailed discussion, see Lunt 1952:4-18.

¹¹For discussion of absolute neutralization, see Kiparsky 1968b.

¹²Pronouns, with which we are not concerned, are probably the most commonly occurring exception to this generalization since they exhibit a stem with grammatical meaning (i.e., a meaning expressible in terms of categories and features).

¹³Morphologically, an endocentric construction is one in which the function of the whole is determined by that of its radical component, which is termed the *head* of the construction.

¹⁴The radical morpheme of a verbal stem need not be verbal, but may name a participant or an attribute *recast* as an event (e.g., *redde*n in English, the radical portion of which names an attribute).

¹⁵Nor are we making any assumptions about which grammatical meanings are represented should it be impossible — either because there are not enough nonradical segments or because there are none with realizations exhibiting suitable distributions — to represent all of them.

¹⁶For more detailed discussion of linkage, see Elson 1980. Here it is sufficient to note that linkage reflects a type of patterned (i.e., nonlexical) distribution, the type in which the occurrence of exponents is associated with marked meaning (i.e., the contribution to meaning of a positively specified feature). Thus, patterned distribution is compatible with functional as well as nonfunctional allomorphy, the difference being determined by the nature of the attributes associated with the occurrence of an exponent. Nonpatterned distribution is compatible only with nonfunctional allomorphy.

¹⁷We are referring here to the type of change termed *deductive* by Andersen (1973). This is change which is a function of the grammar; i.e., change entailed by the generalizations which constitute linguistic competence, and is opposed to *abductive* change, which is change in the generalizations proper. It is the generalizations which interest us since they constitute the system (i.e., define the syntagmatic and paradigmatic organization on which the system is based). However, we have access to them only through change in the output of the grammar (i.e., through deductive change).

¹⁸These mechanisms do not follow in any direct, well-defined way from the observable relationship between two diachronically related corpora, but in the sense of a hypothesis which explains what is observed. There may be other hypotheses, although the one we adopt is undoubtedly that which is implicit in many diachronic studies and the few synchronic in which diachronic evidence is used as systemic justification. In any case, it is the hypothesis which serves as a guide for the evaluation of diachronic phenomena in this study. In addition to Kiparsky 1968a, see Skousen 1975 and Vennemann 1972 as examples of the use of diachronic evidence in synchronic analysis.

¹⁹The problem was also recognized by Hockett in his 1947 paper expanding the suggestions for morphological description made in Harris 1942. Generativists, in contrast, do not seem even to be aware that division is an issue. Perhaps the best example of this is Chomsky and Halle 1968, where many assumptions on word

relationships and division are made, but none is discussed. Nor does Bybee 1985, the most recent generatively oriented study devoted to morphology, give any attention to division.

²⁰To the best of my knowledge, independent status for *ś*, despite the historical evidence for it, has not been suggested by others. Generally, the desinential portions of the forms we are considering are analyzed as indivisible units; thus, as *-em*, *-eś*, *-eśmy*, and *-eście*. For more detailed discussion of the evolution of the forms in question, see Elson 1977 and 1984.

²¹This usage is no longer common in the Polish literary language. See Doroszewski 1973:121 for comment.

²²The movable desinences of the past were, in origin, reduced, or shortened, reflexes of the present tense of 'be' (e.g., 1sg. *-em* from *jem*) which had ceased to be understood as auxiliaries, and been reinterpreted as strings expressing grammatical meaning (i.e., as desinences).

²³Although the analysis proper is based exclusively on the forms in Tošev 1970, forms of potential interest in Koneski 1967 (i.e., the only previous comprehensive study by a native speaker) are noted. The amount of data provided in previous studies is relatively small, and of three types:

1. The verb in question is cited in Tošev 1970 with forms identical to those included in the relevant study.
2. The verb in question is cited in Tošev 1970 but with forms in some respects different from those in the relevant study.
3. The verb in question is not cited in Tošev 1970.

Data of the first type are by far the most numerous. Only data of the second type are cited in this study. And then, only if they are *structurally* significant (i.e., add to the structure implied by the forms in Tošev 1970), not if they merely manifest an already existing structure which is not prescribed for them.

²⁴It is important to note that we do not assume the prescribed norm is attested in *all* of its detail by any individual. Speakers of Macedonian attest in their every-day speech the same types of deviation from the literary norm which can be found in the speech of virtually all speakers of all languages. We assume only that the *system* is attested.

CHAPTER 2

VERBAL MORPHOLOGY

1 Verbal Stems¹

1.1 Syntagmatic Organization

The verbal stem is an upper-level constituent with a maximum of three positions, each of which exhibits a single constituent. Thus, there are three stem constituents in all: *root*, which occurs in second position; *prefixal root-qualifier*, which occurs in first; and *suffixal root-qualifier*, which occurs in third. The root is a radical morpheme which may or may not be verbal. The qualifiers are grammatical morphemes which modify the root aspectually.² Either or both of the qualifiers may be absent, as a result of which the stem may exhibit any of four structures: {prefixal root-qualifier + root + suffixal root-qualifier} (e.g., *pre-gled-uv+*), {prefixal root-qualifier + root} (e.g., *pre-gled+*), {root + suffixal root-qualifier} (e.g., *gled-uv+*), or {root} (e.g., *gled+*).

1.2 Interverbal Aspect

Verbal stems express aspect, which is represented by several features; e.g., [imperfective], [semelfactive], [inceptive].³ Of these, [imperfective] is expressed by *all* stems whether or not there is a morpheme to which it is assigned (e.g., *gled+*, which is [+imperfective] although there is no string representing this meaning; cf. *gled-uv+*, with [+imperfective] expressed by *-uv-*).⁴ Other features representing aspect are expressed only if the stem includes a morpheme with the appropriate meaning.

1.3 Paradigmatic Organization

There are two classifications of the verbal stem: a *semantic* one and a *formal* one. Semantically, stems are classified on the basis of identity in the root (i.e., obligatory) constituent into *families* (e.g., *pre-gled-uv+*, *pre-gled+*, *gled-uv+*, and *gled+*, all of which are members of the *-gled-* family), and within families, on the basis of identity in the specification of remaining stem-level meaning except that conveyed by the feature [imperfective] into *aspectual pairs*, each of which comprises two stems differing only in the specification of this feature; e.g., *pre-gled-uv+* and *pre-gled+*, an aspectual pair within the *-gled-* family). Formally, stems

are classified on the basis of their composition into *suffixed*, which exhibit a realization of the suffixal root-qualifier (e.g., *pre-gled-uv+*) and *unsuffixed*, which do not (e.g., *pre-gled+*, *gled+*). Within each formal type, they are further classified into *prefixed*, which exhibit a realization of the prefixal root-qualifier (e.g., *pre-gled+*), and *unprefixed*, which do not (e.g., *gled-uv+*).

1.4 Summary of Stem Classification

unit	basis
family	identity in semantic content of the root
aspectual pair	identity in the remaining stem-level meaning except that conveyed by the feature [imperfective]
type	presence versus absence of the qualifiers

2 Verbal Forms

2.1 Syntagmatic Organization

Verbal forms exhibit a stem followed by four positions attesting nine constituents: *extender*, which expresses the category of *affiliation*, represented by the feature [verbal]; *aspect indicator*, which expresses the category of *aspect* represented by the feature [aorist];⁵ *mode indicator*, which expresses the category of *mode* represented by the feature [imperative]; *tense indicator*, which expresses the category of *tense* represented by the feature [past]; *person indicator*, which expresses the categories of *person* and *number*,⁶ with *person* represented by the features [personal] and [speaker], and *number* by [singular]; *number indicator*, which expresses the category of *number* represented by the feature [plural]; *status indicator*, which expresses the category of *status* represented by the feature [distanced];⁷ *result indicator*, which expresses the category of *resultativity* represented by the feature [stative]; and *taxis indicator* which expresses the

category of *taxis* represented by the features [circumstantial] and [participative].⁸ The desinential constituents co-occur in twelve patterns:

	1	2	3	4
1	E	M	T	P
2	E	—	T	P
3	E	—	X	N
4	E	—	R	N
5	E	—	S	N
6	E	—	X	—
7	—	M	T	P
8	—	A	T	P
9	—	A	X	N
10	—	A	R	N
11	—	A	S	N
12	—	A	X	—

They co-occur with stems in two word-level patterns: *extended*, in which first position exhibits the extender (i.e., in which the stem is followed by each of the patterns with E in first position; rows 1-6 above); and *unextended*, in which it does not (i.e., in which the stem is followed by each of the patterns with no constituent in this position; rows 7-12 above).

2.2 Paradigmatic Organization

2.2.1 Conjugations

Word-level units are organized on the basis of identity in the stem-constituent into *conjugations*.

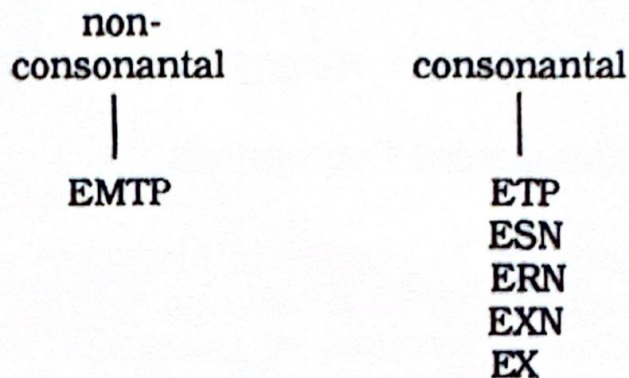
2.2.2 Subsystems

Within the conjugational unit, verbal forms are organized according to the presence versus absence of a recurring string of consonants representing formational meaning (i.e., meaning which defines the event without reference to its participants) into two *subsystems*, including: *consonantal*, in which there is such a string and *nonconsonantal*, in which

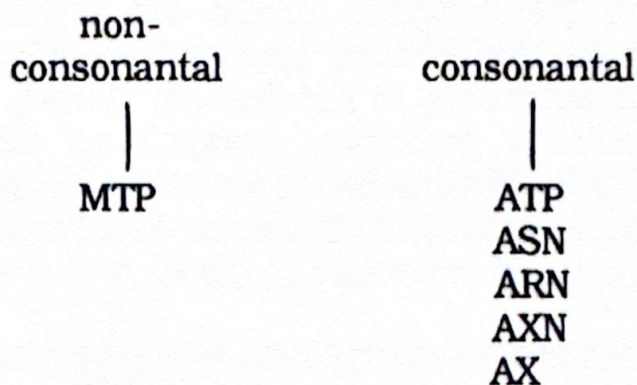
there is not.

2.2.2.1 Distribution of Word-Level Patterns Within Subsystems

2.2.2.1.1 Extended Conjugation



2.2.2.1.2 Unextended Conjugation

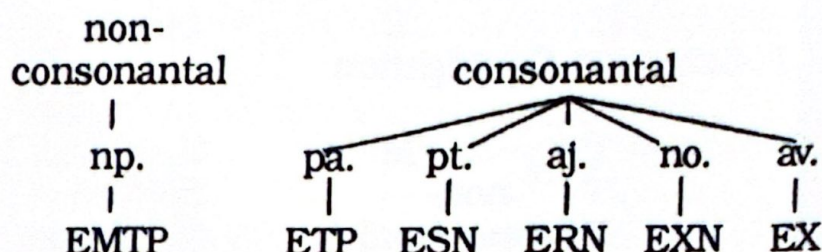


2.2.3 Formations

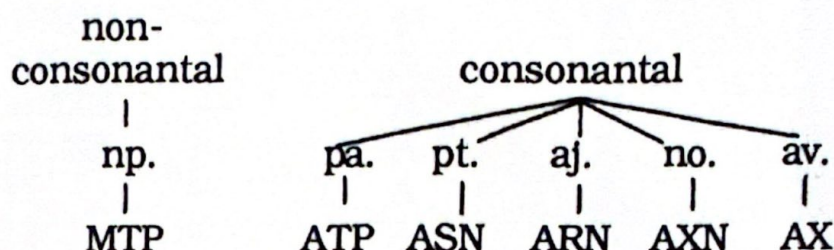
Within each subsystem, forms are organized according to constituent structure into *formations*, which include: *past*, comprised of forms exhibiting ETP or ATP; *nonpast*, comprising forms which are EMP or MTP; *participle*, comprising forms which are ESN or ASN; *adjective*, comprising forms which are ERN or ARN; *noun*, comprising forms which are EXN or AXN; and *adverb*, comprising a single form which is EX or AX.⁹

2.2.3.1 Distribution of Word-Level Patterns Within Formations

2.2.2.3.1 Extended Conjugation



2.2.2.3.2 Unextended Conjugation

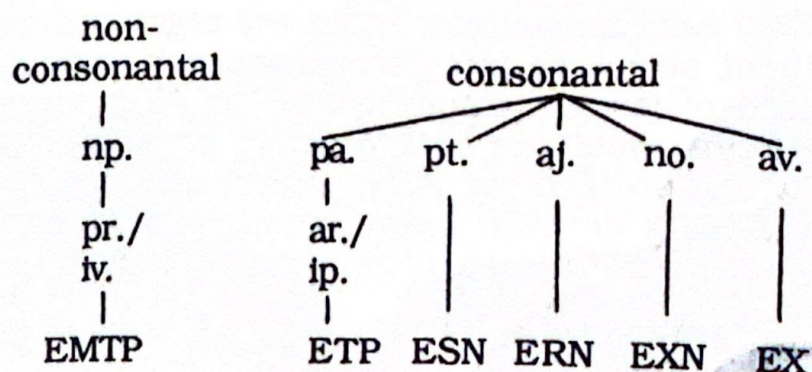


2.2.4 Paradigms

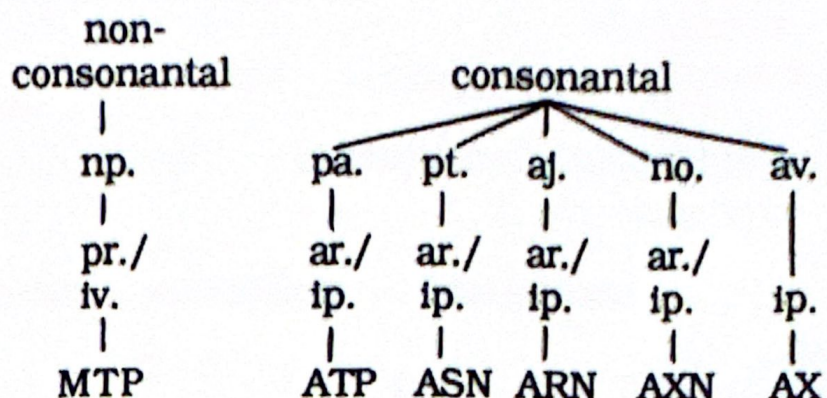
Within the nonpast, forms are organized *functionally* according to the feature [imperative],¹⁰ and within other formations according to the feature [aorist], into paradigms, which include: *present*, comprising forms which are functionally [-imperative]; *imperative*, of forms functionally [+imperative]; *imperfect*, of forms functionally [-aorist]; and *aorist*, of forms functionally [+aorist].¹¹

2.2.4.1 Distribution of Word-Level Patterns Within Paradigms

2.2.4.1.1 Extended Conjugation



2.2.4.1.2 Unextended Conjugation



2.2.5 Subparadigms

Paradigms are organized according to the specification of features representing number into two subparadigms: *singular*, which is [+singular] in personal formations, but [-plural] in nonpersonal; and *plural*, which is [-singular] in personal formations, but [+plural] in nonpersonal.

2.2.6 Summary of the Paradigmatic Organization of Verbal Forms

unit	basis
conjugation	identity in the stem constituent
subsystem	recurring string of consonants representing formational meaning
formation	low-level constituent structure
paradigm	[imperative] and [aorist]
subparadigm	features representing the category of number

3 Realizations and Meanings of Desinential Constituents¹²

3.1 Nonterminal Constituents

constituent	realization	meaning
E	<i>a</i>	'Af.:vb.'
A	<i>a, i, o, Ø</i>	'As.:ar.'
	<i>e</i>	'As.:un.'
M	<i>j</i>	'Mo.:iv.'
	<i>i, e, a, Ø</i>	'Mo.:un.'
T	<i>f</i>	'Te.:pa.'
	<i>Ø</i>	'Te.:un.'
S	<i>n, t</i>	'Re.:sv.'
R	<i>l</i>	'St.:di.'
X	<i>ñ</i>	'Tx.:pc.'
	<i>jki</i>	'Tx.:cl.'

3.2 Terminal Constituents

constituent	realization	meaning
P	<i>me</i>	'Nu.:un.:Pe:pe. ::Sp.:sp.'
	<i>te</i>	'Nu.:un.:Pe.:pe. ::Sp.:un.'
	<i>a, t, at</i>	'Nu.:un.:Pe.:un.'
	<i>m</i>	'Nu.:sg.:Pe.:pe. ::Sp.:sp.'
	<i>š</i>	'Nu.:sg.:Pe.:pe. ::Sp.:un.'
	<i>še, Ø</i>	'Nu.:sg.:Pe.:un.'
N	<i>Ø, a, o</i>	'Nu.:un.'
	<i>e, i</i>	'Nu.:pl.'

4 Co-occurrence of Realizations in Word-Level Forms by Formation¹³

4.1 Extended Conjugation

	1	2	3	4
pr.	<i>a</i>	∅	∅	<i>am, aš, a, ame, ate, aat</i>
iv.	<i>a</i>	<i>j</i>	∅	<i>aj, ajte</i>
pa.ar.	<i>a</i>	—	<i>f, ∅</i>	<i>af, a, afme, afte, aa</i>
pa.ip.	<i>a</i>	—	<i>f, še</i>	<i>af, aše, afme, afte, aa</i>
pt.	<i>a</i>	—	<i>l</i>	<i>al, ala, alo, ale</i>
aj.	<i>a</i>	—	<i>n</i>	<i>an, ana, ano, ani</i>
no.	<i>a</i>	—	<i>ñ</i>	<i>añe</i>
av.	<i>a</i>	—	<i>ŋki</i>	<i>aŋki</i>

4.2 Unextended Conjugation

	1	2	3	4
pr.	—	<i>a, V</i>	∅	<i>am, Vš, V, Vme, Vte, at</i>
iv.	—	<i>i, e</i>	∅	<i>i, ete</i>
pa.ar.	—	<i>V</i>	<i>f, ∅</i>	<i>Vf, V, Vme, Vte, Va</i>
pa.ip.	—	<i>e</i>	<i>f, še</i>	<i>ef, eše, efme, efte, ea</i>
pt.ar.	—	<i>V</i>	<i>l</i>	<i>Vl, Vla, Vlo, Vle</i>
pt.ip.	—	<i>e</i>	<i>l</i>	<i>el, ela, elo, ele</i>
aj.	—	<i>e</i>	<i>n</i>	<i>en, ena, eno, eni</i>
no.	—	<i>e</i>	<i>ñ</i>	<i>eñe</i>
av.	—	<i>e</i>	<i>ŋki</i>	<i>eŋki</i>

If *V* in the present = *e*, *V* in the aorist = *o/e, a, e*, or ∅. If *V* in the present = *i*, *V* in the aorist = *i* or *a*.

Summary of the Distribution of Allomorphs¹⁴

Nonterminal Constituents

constituent	realization	distribution
A 'As.:ar.'	<i>a</i>	ar.; UX; all forms
	<i>l</i>	ar.; UX; all forms
	∅	ar.; UX; all forms
	<i>o/∅</i>	ar.; UX; final <i>t, d</i> α: pa.; 1sg., all pl. ∅: all aorist forms of nonpersonal formations ar.; UX; other finals α: pa.; 1sg., all pl. pt.; mc. ∅: remaining aorist forms of nonper- sonal formations
M 'Mo.:un.'	<i>a</i>	pr.; UX; 1sg., 3pl.
	∅	pr.; EX; 1sg., 3pl.
	<i>e</i>	pr.; UX; 2sg., 3sg., 1pl., 2pl.; iv.; UX; 2pl.
	<i>l</i>	pr.; UX; 2sg., 3sg., 1pl., 2pl.; iv.; UX; 2sg.

5.2 Terminal Constituents

constituent	realization	distribution
P 'Nu.:sg.:Pe.:un.'	še	pa.ip.; all verbs; 2sg., 3sg.
	Ø	pa.ar.; all verbs; 2sg., 3sg.
P 'Nu.:un.:Pe.:un.'	at	pr.; EX; 3pl.
	t	pr.; UX; 3pl.
	a	pa.; all verbs; 3pl.
N 'Nu.:pl.'	e	pt.; all verbs; pl.
	i	aj.; all verbs; pl.
N 'Nu.:un.'	Ø	pt.; aj.; all verbs; sg.mc.
	a	pt.; aj.; all verbs; sg.fm.
	o	pt.; aj.; all verbs; sg.nt.

6 Roots

6.1 Syntagmatic Organization

The root constituent of verbal stems may exhibit alternation in its final and/or prefinal segment.

6.1.1 The Alternations

6.1.1.1 Inventory¹⁵

C/C: t/k, d/ǵ, s/š, n/ñ, d/š,
č/k, ž/g, z/g, m/d

C/Ø: d/Ø

V/V: o/a

V/Ø: i/Ø, e/Ø, o/Ø, e/i/Ø

Ø/V: Ø/i

6.1.1.2 Linkage

There is linkage to three positively specified features, [+aorist] and [+imperfective] representing aspect, and [+imperative] representing mode. Each alternation exhibits an exponent linked to at least one of these features. Some exhibit an exponent linked to two.¹⁶

6.1.2 Distribution of Exponents in Functional Alternations¹⁷

6.1.2.1 Pattern 1: Linkage to [+aorist]

	alternation	linked exponent			unlinked exponent
		pa.	pt.	aj.	
a	d/š		š	—	d
b	e/Ø, o/Ø	Ø	Ø	Ø	e, o
c	č/k, ž/g, i/Ø	k, g, Ø	k, g, Ø	k, g, Ø	č, ž, i
d	m/d	d		—	m

6.1.2.2 Pattern 2: Linkage to [+imperfective]

alternation	linked exponent	unlinked exponent
<i>t/k, d/ǵ, s/š, n/ñ, o/a, Ø/i</i>	<i>k, ǵ, š, ñ, a, i</i>	<i>t, d, s, n, o, Ø</i>

6.1.2.3 Pattern 3: Linkage to [+aorist] and [+imperfective]

alternation	linked exponent	unlinked exponent
	ar. if.	
a. <i>č/k, ž/g, z/g</i>	<i>k, g* k, g</i>	<i>č, ž, z</i>
b. <i>e/i/Ø</i>	<i>Ø i</i>	<i>e</i>

* In the past aorist, *k* and *g* occur in 1sg. and throughout the plural; the unlinked exponent occurs in 2/3sg.

6.1.2.4 Pattern 4: Linkage to [+imperfective] and [+imperative]

alternation	linked exponent	unlinked exponent
<i>d/Ø</i>	<i>Ø</i>	<i>d</i>

7 Patterns of Conjugation

The realizations of desinential strings combine to yield twelve patterns of conjugation, which are classified in terms of the attributes distinguishing them. These include presence versus absence of the extender, and, among patterns which lack the extender, the dominant realization of the mode indicator in the present, as well as that of the aspect indicator in the past aorist.¹⁸

7.1 Extended Conjugation
(SF: -tr-; SF: -(V)v-; S: -k-; US:NA)¹⁹

7.1.1 Desinential Strings²⁰

pr. -am, -aš, -a, -ame, -ate, -at

iv. -aj, -ajte²¹

pa. -af, -a, -afme, -afte, -aa
-af, -aše, -afme, afte, -aa

pt. -al, -ala, -alo, -ale

aj. -an, -ana, -ano, -ani

no. -aŋe

av. -ajki

7.1.2 Exemplification²²

US:NA

gled+:

pr. *gledam, gledaš, gleda, gledame, gledate, gledaat*

iv. *gledaj, gledajte*

pa. *gledaf, gleda, gledafme, gledafte, gledaa
gledaf, gledaše, gledafme, gledafte, gledaa*

pt. *gledal, gledala, gledalo, gledale*

aj. *gledan, gledana, gledano, gledani*

no. *gledaŋe*

av. *gledajki*

7.2 Unextended Conjugation

7.2.1 *e:o* (US:NA; US:AL [1, 3, 4])

7.2.1.1 Desinential Strings

a. Stems with final *t* or *d*, and stems with *-nes*-²³pr. *-am, -eš, -e, -eme, -ete, -at*iv. *-i, -ete*²⁴pa. *-of, -e, -ofme, -ofte, -oa*
*-ef, -eše, -efme, -efte, -ea*pt. *-l, -la, -lo, -le*
*-el, -ela, -elo, -ele*aj. *-en, -ena, -eno, -eni*no. *-eñe*av. *-ejki*

b. Other stems

pr. *-am, -eš, -e, -eme, -ete, -at*iv. *-i, -ete*pa. *-of, -e, -ofme, -ofte, -oa*
*-ef, -eše, -efme, -efte, -ea*pt. *-ol, -la, -lo, -le*
*-el, -ela, -elo, -ele*aj. *-en, -ena, -eno, -eni*²⁵no. *-eñe*av. *-ejki*

7.2.1.2 Exemplification

a. Stems with final *t* or *d* and stems with *-nes-*

US:NA

*met+:*pr. *metam, meteš, mete, meteme, metete, metat*iv. *meti, metete*pa. *metof, mete, metofme, metofte, metoa metef, meteše, metefme, metefte, metea*pt. *mel, mela, melo, mele²⁶ metel, metela, metelo, metele*aj. *meten, metena, meteno, meteni*no. *meteñe*av. *metejki*

US:AL [1]

*id+²⁷*pr. *idam, ideš, ide, ideme, idete, idat*iv. *idi, idete*pa. *idof, ide, idofme, idofte, idoa ideo, ideše, ideofme, ideofte, ideo*pt. *išol, išla, išlo, išle idel, idela, idelo, idele*aj. *iden, idena, ideno, ideni*no. *ideñe*av. *idejki*

US:AL [4]

dad+:

- pr. *dadam, dadeš, dade, dademe, dadete, dadat*
- iv. *daj, dajte*
- pa. *dadof, dade, dadofme, dadofte, dadoa dadeš, dadeše, dadešme, dadešte, dadea*
- pt. *dal, dala, dalo, dale dadel, dadela, dadelo, dadele*
- aj. *daden, dadena, dadeno, dadeni*

b. Other stems

US:NA

pas+:

- pr. *pasam, paseš, pase, paseme, pasete, pasat*
- iv. *paš, pasete*
- pa. *pasof, pase, pasofme, pasofte, pasoa paseš, paseše, pasešme, pasešte, pasea*
- pt. *pasol, pasla, paslo, pasle pasel, pasela, paselo, pasele*
- aj. *pasen, pasena, paseno, paseni*
- no. *paseše*
- av. *paseški*

US:AL [3]

peč+ /pek+:

- pr. *pečam, pečeš, peče, pečeme, pečete, pečat*
- iv. *pečī, pečete*
- pa. *pekof, peče, pekofme, pekofte, pekoa
pečef, pečeše, pečefme, pečefte, pečea*
- pt. *pekol, pekla, peklo, pekle
pečel, pečela, pečelo, pečele*
- aj. *pečen, pečena, pečeno, pečeni*
- no. *pečeñe*
- av. *pečejki*

7.2.2 *ea* (SF:-n-; SF:-e-; US:NA; US:AL [1, 3])

7.2.2.1 Desinential Strings

- pr. *-am, -eš, -e, -eme, -ete, -at*
- iv. *-i, -ete*
- pa. *-af, -a, -afme, -afte, -aa
-ef, -eše, -efme, -efte, -ea*
- pt. *-al, -ala, -alo, -ale
-el, -ela, -elo, -ele*
- aj. *-an, -ana, -ano, -ani
-en, -ena, -eno, -eni*
- no. *-añe
-eñe*
- av. *-ejki*

7.2.2.2 Exemplification

US:NA

*piš+:*pr. *pišam, pišeš, piše, pišeme, pišete, pišat*iv. *piši, pišete*pa. *pišaf, piša, pišafme, pišafte, pišaa*
*pišef, pišeše, pišefme, pišefte, pišea*pt. *pišal, pišala, pišalo, pišale*
*pišel, pišela, pišelo, pišele*aj. *pišan, pišana, pišano, pišani*

US:NA

*la+:*pr. *laam, laeš, lae, laeme, laete, laa*iv. *laj, lajte*pa. *lajaf, laja, lajafme, lajafte, lajaa*
*laef, laeše, laefme, laefte, laea*pt. *lajal, lajala, lajalo, lajale*
*lael, laela, laelo, laele*aj. *lajan, lajana, lajano, lajani*
*laen, laena, laeno, laeni*no. *laeñe*av. *laejki*

US:NA [1]

suč+ / suk+:

- pr. sučam, sučeš, suče, sučeme, sučete,
sučat
- iv. suči, sučete
- pa. sukaf, suka, sukafme, sukafte, sukaa
sučef, sučeše, sučefme, sučefte, sučea
- pt. sukal, sukala, sukalo, sukale
sučel, sučela, sučelo, sučele
- aj. sukan, sukana, sukano, sukani
sučen, sučena, sučeno, sučeni
- no. sučeňe
- av. sučejki

US:AL [1]

spi+ / sp+:

- pr. spiam, spieš, spie, spieme, spiete, spiat
- iv. spij, spijte
- pa. spaf, spa, spafme, spafte, spaa
spief, spieše, spiefme, spiefte, spiea
- pt. spal, spala, spalo, spale
spiel, spiela, spielo, spiele
- aj. span, spana, spano, spani
- no. spieňe
- av. spiejki

US:AL [3]

*ber+ / br+:*pr. *beram, bereš, bere, bereme, berete, berat*iv. *beri, berete*pa. *braf, bra, brafme, brafte, braa*
*beref, bereše, berefme, berefte, berea*pt. *bral, brala, bralo, brale*
*berel, berela, berelo, berele*aj. *bran, brana, brano, brani*
*beren, berena, bereno, bereni*no. *brañe*
*bereñe*av. *berejki*7.2.3 *e:Ø* (US:NA)²⁸

7.2.3.1 Desinential Strings

pr. *-am, -eš, -e, -eme, -ete, -at*iv. *-i, -ete*pa. *-f, -Ø, -fme, -fte, -a*
*-ef, -eše, -efme, -efte, -ea*pt. *-l, -la, -lo, -le*
*-el, -ela, -elo, -ele*aj. *-an, -ana, -ano, -ani*
*-en, -ena, -eno, -eni*no. *-eñe*av. *-ejki*

7.2.3.2 Exemplification

US:NA

bi+:

pr. *biam, bieš, bie, bieme, biete, blat*

iv. *bij, bijte*

pa. *bif, bi, bifme, bifte, bia*

bief, bieše, biefme, biefte, biea

pt. *bił, bila, bilo, bile*

biel, biela, bielo, biele

aj. *bien, biena, bieno, bieni*

no. *bieñe*

av. *biejki*

7.2.4 e:e (US:NA; US:AL [1])

7.2.4.1 Desinential Strings

pr. *-am, eš, -e, -eme, -ete, -at*

iv. *-i, -ete*

pa. *-ef, -e, -efme, -efte, -ea*

-ef, -eše, -efme, -efte, -ea

pt. *-el, -ela, -elo, -ele*

aj. *-en, -ena, -eno, -eni*

no. *-eñe*

av. *-ejki*

7.2.4.2 Exemplification

US:NA

u-mr+:

pr. *umram, umreš, umre, umreme, umrete,*
umrat

iv. *umri, umrete*

pa. *umref, umre, umrefme, umrefte, umrea*
umref, umreše, umrefme, umrefte,
umrea

pt. *umrel, umrela, umrelo, umrele*

aj. *umren, umrena, umreno, umreni*

US:AL [1]

mel+ / ml+:

pr. *melam, meleš, mele, meleme, melete,*
melat

iv. *meli, melete*

pa. *mlef, mle, mlefme, mlefte, mlea*
melef, meleše, melefme, melefte,
mlea

pt. *mlel, mlela, mlelo, mlele*
melel, melela, melelo, melele

aj. *mlel, mlena, mleno, mleni*
melen, mlena, mleno, mleni

no. *mlele*

av. *mlele*

7.2.5 *ti* (SF:-*ol*-; SF:-*ot*-; SF:-*ič*-; US:NA)

7.2.5.1 Desinential Strings

pr. -*am*, -*iš*, -*i*, -*ime*, -*ite*, -*at*

iv. -*i*, -*ete*

pa. -*if*, -*i*, -*ifme*, -*ifte*, -*ia*²⁹
-*ef*, -*eše*, -*efme*, -*efte*, -*ea*

pt. -*il*, -*ila*, -*ilo*, -*ile*
-*el*, -*ela*, -*elo*, -*ele*

aj. -*en*, -*ena*, -*eno*, -*eni*

no. -*eñe*

av. -*ejki*

7.2.5.2 Exemplification

US:NA

nos+:

pr. *nosam*, *nosiš*, *nosi*, *nosime*, *nosite*, *nosat*

iv. *nosi*, *nosete*

pa. *nosif*, *nosi*, *nosifme*, *nosifte*, *nosia*
nosef, *noseše*, *nosefme*, *nosefte*, *nosea*

pt. *nosil*, *nosila*, *nosilo*, *nosile*
nosel, *nosela*, *noselo*, *nosele*

aj. *nosen*, *nosena*, *noseno*, *noseni*

no. *noseñe*

av. *nosejki*

7.2.6 *ta*³⁰ (US:NA)

7.2.6.1 Desinential Strings

pr. -am, -iš, -i, -ime, -ite, -at

iv. -i, -ete³¹

pa. -af, -a, -afme, -afte, -aa
-ef, -eše, -efme, -efte, -ea

pt. -al, -ala, -alo, -ale
-el, -ela, -elo, -ele

aj. -an, -ana, -ano, -ani

no. -eňe

av. -ejkí

7.2.6.2 Exemplification

US:NA

drž+:

pr. *držam, držiš, drži, držime, držite, držat*

iv. *drži, držete*

pa. *držaf, drža, držafme, držafte, držaa*
držef, držeše, držefme, držefte, držea

pt. *držal, držala, držalo, držale*
držel, držela, drželo, držele

aj. *držan, držana, držano, držani*

no. *držeňe*

av. *držejkí*

7.2.7 *e:i//o* (US:AL [1, 3])

7.2.7.1 Desinential Strings

pr. -am, -eš, -e, -eme, -ete, -at

iv. -i, -ete

pa. -of, -e, -ofme, -ofte, -oa

-if, -i, -ifme, -ifte, -ia

-ef, -eše, -efme, -efte, -ea

pt. -ol, -la, -lo, -le

-il, -ila, -ilo, -ile

-el, -ela, -elo, -ele

aj. -an, -ana, -ano, -ani

-en, -ena, -eno, -eni

7.2.7.2 Exemplification

US:AL [1, 3]

do-striž+ / do-strig+:

pr. *dostrizam, dostrižiš, dostriži,*
dostrizime, dostrižite, dostrižat

iv. *dostriži, dostrižete*

pa. *dostrigof, dostriže, dostrigofme,*
dostrigofte, dostrigoa

dostrižif, dostriži, dostrižifme,
dostrižifte, dostrižia

dostrižef, dostrižeše, dostrižefme,
dostrižefte, dostrižea

pt. *dostrigol, dostrigla, dostriglo, dostrigle*
dostrižil, dostrižila, dostrižilo, dostrižile
dostrižel, dostrižela, dostriželo,
dostrižele

aj. *dostrigan, dostrigana, dostrigano,*
dostrigani

dostrizen, dostrizena, dostrizeno,
dostrizeni

7.2.8 *ti//o* (US:AL [3])

7.2.8.1 Desinential Strings

pr. *-am, -iš, -i, -ime, -ite, -at*

iv. *-i, -ete*

pa. *-if, -i, -ifme, -ifte, -ia*

-of, -e, -ofme, -ofte, -oa

-ef, -eše, -efme, -efte, -ea

pt. *-il, -ila, -ilo, -ile*

-ol, -la, -lo, -le

-el, -ela, -elo, -ele

aj. *-en, -ena, -eno, -eni*

7.2.8.2 Exemplification

US:AL [3]

iz-brič+ / iz-brik+:

pr. *izbričam, izbričiš, izbriči, izbričime,*
izbričite, izbričat

iv. *izbriči, izbričete*

pa. *izbričif, izbriči, izbričifme, izbričifte,*
izbričla

izbrikof, izbriče, izbrikofme, izbrikofte,
izbrikoa

izbričef, izbričeše, izbričefme, izbričefte,
izbričea

- pt. *izbričil, izbričila, izbričilo, izbričile*
izbrikol, izbrikla, izbriklo, izbrikle
izbričel, izbričela, izbričelo, izbriče
 aj. *izbričen, izbričena, izbričeno, izbričeni*

7.2.9 *ti//a* (US:NA; US:AL [1])

7.2.9.1 Desinential Strings

- pr. *-am, -iš, -i, -ime, -ite, -at*
- iv. *-i, -ete*
- pa. *-if, -i, -ifme, -ifte, -ia*
-af, -a, -afme, -afte, -aa
-ef, -eše, -e, -efme, -efte, -ea
- pt. *-il, -ila, -ilo, -ile*
-al, -ala, -alo, -ale
-el, -ela, -elo, -ele
- aj. *-an, -ana, -ano, -ani*
-en, -ena, -eno, -eni
- no. *-eñe*
- av. *-ejki*

7.2.9.2 Exemplification

US:NA

bro+:³²

- pr. *brojam, broiš, broi, broime, broite,*
brojat
- iv. *broj, brojte*

- pa. *brojaf, broja, brojafme, brojafte, brojaa*
broif, broi, broifme, broifte, broia
broef, broeše, broefme, broefte, broea
- pt. *brojal, brojala, brojalo, brojale*
broil, broila, broilo, broile
broel, broela, broelo, broele
- aj. *brojan, brojana, brojano, brojani*
broen, broena, broeno, broeni
- no. *broeňe*
- av. *broejki*

US:NA

belež+:

- pr. *beležam, beležiš, beleži, beležime,*
beležite, beležat
- iv. *beleži, beležete*
- pa. *beležaf, beleža, beležafme, beležafte,*
beležaa
beležif, beleži, beležifme, beležifte,
beležia
beležef, beležeše, beležefme, beležefte,
beležea
- pt. *beležal, beležala, beležalo, beležale*
beležil, beležila, beležilo, beležile
beležel, beležela, beleželo, beležele
- aj. *beležan, beležana, beležano, beležani*
beležen, beležena, beleženo, beleženi

no. *beležeñe*

av. *beležejki*

US:AL [1]

do-služ+/do-slug+:

pr. *doslužam, doslužiš, dosluži, doslužime,*
doslužite, doslužat

iv. *dosluži, doslužete*

pa. *doslužif, dosluži, doslužifme, doslužifte,*
doslužia

doslugaf, dosluga, doslugafme, doslugafte,
doslugaa

doslužef, doslužeše, doslužefme,
doslužefte, doslužea

pt. *doslužil, doslužila, doslužilo, doslužile*
doslugal, doslugala, doslugalo, doslugale
doslužel, doslužela, dosluželo, doslužele

aj. *doslugan, doslugana, doslugano, doslugani*
doslužen, doslužena, dosluženo, dosluženi

7.2.10 *ɪo* (US:NA)

7.2.10.1 Desinential Strings

pr. *-am, -iš, -i, -ime, -ite, -at*

iv. *-i, -ete*

pa. *-of, -e, -ofme, -ofte, -oa*
-ef, -eše, -efme, -efte, -ea

pt. *-el, -ela, -elo, -ele*

aj. *-en, -ena, -eno, -eni*

7.2.10.2 Exemplification

US:NA

do-sed+:

- pr. *dosedam, dosediš, dosedi, dosedíme, dosedíte, dosedat*
- iv. *dosedí, dosedete*
- pa. *dosedof, dosede, dosedofme, dosedofte, dosedoa*
dosedef, dosedeše, dosedefme, dosedefte, dosedea
- pt. *dosedel, dosedela, dosedelo, dosedele*
- aj. *doseden, dosedena, dosedeno, dosedení*

7.2.11 *i//e:i//a* (US:NA)

7.2.11.1 Desinential Strings

- pr. *-am, -iš, -i, -ime, -ite, -at*
-am, -eš, -e, -eme, -ete, -at
- iv. *-i, -ete*
- pa. *-if, -i, -ifme, -ifte, -ia*
-af, -a, -afme, -afte, -aa
-ef, -eše, -efme, -efte, -ea
- pt. *-il, -ila, -ilo, -ile*
-al, -ala, -alo, -ale
-el, -ela, -elo, -ele
- aj. *-an, -ana, -ano, -ani*
-en, -ena, -eno, -eni

7.2.11.2 Exemplification

US:NA

iz-diš+:

- pr. izdišam, izdišiš, izdiši, izdišime, izdišite,
izdišat
izdišam, izdišeš, izdiše, izdišeme,
izdišete, izdišat
- iv. izdiši, izdišete
- pa. izdišif, izdiši, izdišifme, izdišifte, izdišia
izdišaf, izdiša, izdišafme, izdišafte, izdišaa
izdišef, izdišeše, izdišefme, izdišefte,
izdišea
- pt. izdišil, izdišila, izdišilo, izdišile
izdišal, izdišala, izdišalo, izdišale
izdišel, izdišela, izdišelo, izdišele
- aj. izdišan, izdišana, izdišano, izdišani
izdišen, izdišena, izdišeno, izdišeni

7.2.12 i//e:e (US:NA)

7.2.12.1 Desinential Strings

- pr. -am, -iš, -i, -ime, -ite, -at
-am, -eš, -e, -eme, -ete, -at
- iv. -i, -ete
- pa. -ef, -e, -efme, -efte, -ea
-ef, -eše, -efme, -efte, -ea
- pt. -el, -ela, -elo, -ele
- no. -eñe
- av. -ejki

7.2.12.2 Exemplification

US:NA

diš+:

pr. *dišam, dišiš, diši, dišime, dišite, dišat*
dišam, dišeš, diše, dišeme, dišete, dišat

iv. *diši, dišete*

pa. *dišef, diše, dišefme, dišefte, dišea*
dišef, dišeše, dišefme, dišefte, dišea

pt. *dišel, dišela, dišelo, dišele*

no. *dišeňe*

av. *dišejki*

7.2.13 Summary by Paradigm of Realizations in Desinence Initial Position³³7.2.13.1 Verbs With Desinence Initial *e* in the Present

iv.	ip.		ar.		e.g., ³⁴
		pa.	pt.	aj.	
<i>i/e</i>	<i>e</i>	<i>o</i>	<i>o/∅</i>	—	<i>pas+*</i>
<i>i/e</i>	<i>e</i>	<i>o</i>	<i>∅</i>	—	<i>met+</i>
<i>i/e</i>	<i>e</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>piš+*</i>
<i>i/e</i>	<i>e</i>	<i>∅</i>	<i>∅</i>	—	<i>bi+</i>
<i>i/e</i>	<i>e</i>	<i>e</i>	<i>e</i>	—	<i>umr+</i>
<i>i/e</i>	<i>e</i>	<i>o//l</i>	<i>o/∅//l</i>	<i>a</i>	<i>dostriž+/ dostriḡ+*</i>

7.2.13.2 Verbs With Desinence Initial *i* in the Present

iv.	ip.	ar.			e.g.,
		pa.	pt.	aj.	
<i>i/e</i>	<i>e</i>	<i>i</i>	<i>i</i>	—	<i>nos+</i>
<i>i/e</i>	<i>e</i>	<i>a</i>	<i>a</i>	<i>a</i>	<i>drž+</i>
<i>i/e</i>	<i>e</i>	<i>i/a</i>	<i>i/a</i>	<i>a</i>	<i>bro+</i>
<i>i/e</i>	<i>e</i>	<i>o</i>	—	—	<i>dosed+</i>
<i>i/e</i>	<i>e</i>	<i>i/o</i>	<i>i/o</i>	—	<i>izbrič+ / izbrlk+*</i>

7.2.13.3 Verbs With Desinence Initial *e* and *i* in the Present

iv.	ip.	ar.			e.g.,
		pa.	pt.	aj.	
<i>i/e</i>	<i>e</i>	<i>i/a</i>	<i>i/a</i>	<i>a</i>	<i>izdiš+</i>
<i>i/e</i>	<i>e</i>	<i>e</i>	—	—	<i>diš+</i>

8 Stem Subtypes

Verbal stems are subtyped according to their pattern of conjugation, which functions as the sole classification unless it correlates with, and is thus inferable from, a structural attribute of the stem. In this case, the attribute also functions as a classifier, hierarchically superordinate to the pattern. All suffixed verbs exhibit both classifiers since, among them, the pattern of conjugation consistently correlates with the realization of the suffixal root-qualifier:

qualifier	pattern	e.g.,
-Vv-	E	<i>gled-uv+</i>
-Vs-	E	<i>kin-is+</i>
-k-	E	<i>šet-k+</i>
-ir-	E	<i>analiz-ir+</i>
-n-	-E\\e:α ³⁵	<i>pad-n+</i>
-e-	-E\\ea	<i>slab-e+</i>
-ol-	-E\\i:i	<i>šum-ol+</i>
-ič-	-E\\i:i	<i>originaln-ič+</i>
-ot-	-E\\i:i	<i>pisk-ot+</i>

Unsuffixes stems regularly exhibit only the pattern of conjugation as classifier.

8.1 Summary of Unsuffixes Stem Subtypes

type	e.g.,
E	<i>gled+</i>
-E\\e:o	<i>met+</i>
-E\\ea	<i>piš+</i>
-E\\e:Ø	<i>bi+</i>
-E\\e:e	<i>umr+</i>
-E\\i:i	<i>nos+</i>
-E\\ia	<i>drž+</i>

-E\\e:i//o	do-strž+/do-strig+
-E\\t:i//o	iz-brič+/iz-brik+
-E\\t:i//a	bro+
-E\\t:o	do-sed+
-E\\i//e:t//a	iz-diš+
-E\\i//e:e	diš+

9 'be'

The verb 'be' is morphologically unique. Tošev 1970 cites present forms only: 1sg. *sum*, 2sg. *si*, 3sg. *e*, 1pl. *sme*, 2pl. *ste*, 3pl. *se*. Lunt 1952:79 adds a number of forms: 1sg. *bef*, 2/3sg. *beše*, 1pl. *befme*, 2pl. *befte*, and 3pl. *bea* in the past; 2sg. *bidi* and 2pl. *bidete* in the imperative, as well as sg.mc. *bil*, sg.fm. *bila*, sg.nt., and pl. *bile* in the participle. There is no opposition of aorist to imperfect in the past or participle. Nominal, adjectival, and adverbial forms apparently do not exist although *bidejki*, the inherited adverb, continues to exist as a subordinating conjunction with the meaning 'because'. In addition to the forms cited, Lunt notes the existence of a rare form *bi* which functions as a third person singular aorist.

Appendix 1: Dictionary of Roots Occurring in Unsuffixed Stems Attesting Unproductive Patterns of Conjugation

e:o

-bod-, -dad-/da-, -gnet-, -id-/iš-, -jad-, -klad-/kla-,
-krad-, °leč-/lek-, °lez-/leg-, -met-, -mož-/mog-,
-molz-/molg-, -nes-, -pas-, -peč-/pek-, -plet-,
-pred-, rast-, -reč-/rek-, -seč-/sek-, -sret-/srek-,
-striž-/strig-, -teč-/tek-, -tolč-/tolk-, -tres-, -ved-,
-zem-/zed-

ea

-ap-, -ba-, -ber-/bir-/br-, -ble-, -bote-, -bre-, -briš-,
-crp-, -ča- čemre-, čma-, -der-/dir-/dr-, -drem-,
-gre-, -greb-, -griz-, -ka-, -kaž-, -kap-, -kol-/kl-,
-kolv-, -kov-, -la-, -laž-/lag-, -le-, -liz-/liž-, -lule-,
-ma-, -niž-, -oča-, -opas-, -osnov-, -otn-, -pe-,
-per-/pir-/pr-, -piš-, -plač-/plak-, -rež-, -se-,
-spi-/sp-, °stel-/°stil-/°stl-, -struž-/strug-,
-suč-/suk-, štip-, -tra-, -uspe-, -ve-, -vez-, -vire-,
-vrz-, -zre-, -žez-

e:Ø

-bi-, blu-, -ču-, -du-, -gni-, -kri-, -li-, -mi-, -obu-,
-pcu-, -pi-, -ri-, -ši-, -tka-, -tri-, -tru-, -vi-, -vri-,
-zna-, -žni-, -odzv-

e:e

°dir-/°dr-, -mečta-, -mel-/ml-, °mir-/°mr-, -otm-,
°pir-/°pr-, -poft-, -rev-, -ropta-, -sja-, °stir-/°str-,
°tir-/°tr-, °vir-/°vr-, -vliā-, -vri-/vr-, °dzir-/°džr-, -zja-

ta

-drž-

tɪ//a

-belež-, -bliž-, -bo-, -bro-, -do-, -dvo-, -drž-, -gno-,
 -kro-, -lež-, -po-, -poko-, -ro-, -slo-, -služ-/slug-,
 -sto-, -stro-, -svo-, -ta-

tɪ//o

-brič-/brik-, -vad-, -vrt-

e:ɪ//o

-striž-/strig-

tɔ

-sed-

ɪ//e:ɪ//a

-diš-

ɪ//e:e

-diš-

Appendix 2: Dictionary of Radical Morphemes

<i>a</i>		
	-ap-	'string'
<i>b</i>		
	-ba-	'practice witchcraft'
	-belež-	'note'
	-ber- / -bir- / -br-	'carry'
	-bl-	'strike'
	-ble-	'bleat'
	-bliž-	'approach'
	-blu-	'vomit'
	-bo-	'fear'
	-bod-	'jab'
	-bote-	'grow'
	-bre-	'make the sound of a deer'
	-briš-	'erase'
	-bro-	'count'
<i>c</i>		
	-crp-	'draw'
<i>č</i>		
	-čemre-	'wither'
	°čin- / °čn-	'begin'
	-čma-	'pine away'
	-ču-	'hear'
<i>d</i>		
	-dad-	'give'
	-der- / -dir- / dr-	'tear'
	°der- / °dr-	'beat'
	-do-	'suckle'
	-drem-	'nap'
	-drž-	'hold'
	-dvo-	'double'
	-du-	'blow'

g

-gled-	'look'
-gnet-	'press'
-gni-	'rot'
-gno-	'fester'
-gre-	'heat'
-greb-	'dig'
-griz-	'gnaw'

t

-td- / -tš-	'go'
-------------	------

j

-jad-	'eat'
-------	-------

k

-ka-	'repent'
-kap-	'drip'
-kaž-	'say'
-klad-	'put'
-kol- / -kl-	'slaughter'
-kolv-	'peck'
-kov-	'forge'
-krad-	'steal'
-kri-	'cover'
-kro-	'cut'

l

-la-	'bark'
-laž- / -lag-	'lie'
-le-	'pour'
°lez- / °leg-	'go'
-lež-	'recline'
-li-	'pour'
-liz- / -liž-	'lick'
-lule-	'swing'

m

-ma-	'tire'
-mečta-	'dream'
-mel- / -ml-	'grind'
-met-	'sweep'
-mi-	'wash'
°mīr- / °mr-	'die'
-mož- / -mog-	'be able'
-molz- / -molg-	'milk'

n

-nes-	'carry'
-niž-	'string'
-nos-	'carry'

o

-obu-	'put on'
-oča-	'despair'
-odzvi-	'call'
-opaš-	'gird'
-osnov-	'found'
-otim- / -otm-	'kidnap'
-otn-	'take away'

p

-pad- / -paǵ-	'fall'
-pas-	'graze'
-pcu-	'curse'
-pe-	'sing'
-peč- / -pek-	'bake'
-per- / -pir- / -pr-	'wash'
°pir- / °pr-	'reach'
-pl-	'drink'
°pin- / °pn-	'snag'
-piš-	'write'
-plač- / -plak-	'cry'
-plet-	'braid'
-po-	'give to drink'
-poft-	'want'
-poko-	'calm'

-pred-

'spin'

r

-rast-

'grow'

-reč- / -rek-

'say'

-rev-

'roar'

-rež-

'cut'

-rl-

'dig'

-ro-

'swarm'

-ropta-

'mumble'

s

-se-

'sow'

-sed-

'sit'

-seč- / -sek-

'cut'

-sip-

'pour'

-sja-

'shine'

-skub-

'layer'

-služ- / -slug-

'serve'

-sme-

'dare'

-snov-

'warp'

-spi- / -sp-

'sleep'

-sret- / -srek-

'meet'

°stel- / °stil- / °stl-

'spread'

°stir- / °str-

'spread'

-sto-

'stand'

-striž- / -strig-

'shear'

-stro-

'build'

-struž- / -strug-

'scrape'

-suč- / -suk-

'twist'

-svo-

'assimilate'

š

-ši-

'sew'

-štip-

'pinch'

t

-ta-

'melt'

-teč- / -tek-

'flow'

°tir- / °tr-

'rub'

	-tka-	'weave'
	-tolč- / -tolk-	'push'
	-tra-	'last'
	-tres-	'shake'
	-tri-	'rub'
	-tru-	'poison'
u		
	-uspe-	'succeed'
v		
	-vad-	'lead'
	-ve-	'blow'
	-ved-	'lead'
	-vez-	'embroider'
	-vi-	'howl'
	°vir- / °vr-	'hide'
	-vire-	'grow'
	-vleč- / -vlek-	'drag'
	-vliā-	'influence'
	-vri- / -vr-	'boil'
	-vrt-	'turn'
	-vrz-	'tie'
z		
	-zem- / zed-	'take'
	-zja-	'yawn'
	-zna-	'know'
	-zre-	'ripen'
ž		
	-žež-	'burn'
	-žni-	'harvest'
dž		
	°džir- / °džr-	'observe'

Appendix 3: Dictionary of Stems

a

<i>ar-es+</i>	'like'
---------------	--------

b

<i>bak-n+</i>	'kiss'
<i>belež+</i>	'note'
<i>ber+/br+</i>	'carry'
<i>bi+</i>	'strike'
<i>bro+</i>	'count'

c

<i>cru-os+</i>	'become wormy'
----------------	----------------

č

<i>ču+</i>	'hear'
------------	--------

d

<i>dad+</i>	'give'
<i>diš+</i>	'breathe'
<i>do-drž+</i>	'hold'
<i>do-nos+</i>	'bring'
<i>do-sed+</i>	'stay'
<i>do-služ+/do-slug+</i>	'serve'
<i>do-striž+/do-strig+</i>	'shear'
<i>do-vleč+/do-vlek+</i>	'drag'
<i>do-vlek-uv+</i>	'drag'
<i>do-žni+</i>	'reap'
<i>drž+</i>	'hold'

g

<i>gled+</i>	'look at'
<i>gled-uv+</i>	'look at'
<i>greb+</i>	'dig'

i

<i>iz-brič+</i> / <i>iz-brik+</i>	'shave'
<i>iz-diš+</i>	'expire'
<i>iz-gor+</i>	'tan'
<i>iz-nes+</i>	'carry out'
<i>iz-nes-uv+</i>	'carry out'

k

<i>kaž+</i>	'say'
<i>kaž-uv+</i>	'say'
<i>kin-is+</i>	'go out'

l

<i>la+</i>	'bark'
<i>leg-n+</i>	'lie'
<i>liz-n+</i>	'lick'

m

<i>mel+</i> / <i>ml+</i>	'grind'
<i>met+</i>	'sweep'
<i>molk-n+</i>	'be silent'

n

<i>naw-as+</i>	'overcome'
<i>nes+</i>	'lay eggs'
<i>nos+</i>	'carry'

o

<i>o-drž+</i>	'gain'
<i>originalnič+</i>	'act original'

p

<i>pad-n+</i>	'fall'
<i>pad-n-uv+</i>	'fall'
<i>pas+</i>	'graze'
<i>peč+</i> / <i>pek+</i>	'bake'
<i>pisk-ot+</i>	'squeak'

	piš+	'write'
	pre-gled+	'inspect'
	pre-gled-uv+	'inspect'
	pri-nes+	'bring'
	pro-analiz-ir+	'analyze'
r		
	rast+	'grow'
s		
	slab-e+	'grow weak'
	smet-n+	'take off'
	smet-in+	'take off'
	spi+/sp+	'sleep'
	striž+/strig+	'shear'
	suč+/suk+	'twist'
	s-vrt+	'roll up'
š		
	šet-k+	'stroll'
	šum-ol+	'make noise'
t		
	tka+	'weave'
	tres+	'shake'
u		
	u-mr+	'die'
z		
	za-angaž-ir+	'engage'
	zna+	'know'
	zo-vri+/zo-vr+	'boil'

Notes

¹The presentation of the contemporary system is comprehensive with respect to *structure*, not *lexicon*. However, deviations from the norm are noted, and several lists are included for reference to and exemplification of various types of items (e.g., radical morphemes with alternation). Note these conventions: 1. Items in lists are alphabetized according to the order of letters in the Roman alphabet, with symbols exhibiting diacritics immediately following the base symbol, and symbols which are not letters of the Roman alphabet listed last. Thus: *a, b, c, č, d, e, f, g, ġ, ĩ, j, k, k̃, l, ĺ, m, n, ñ, o, p, r, s, š, t, u, v, x, z, ž, dz, dž*. 2. Alternations are cited in the format *X/Y_n*, where *X* represents underlying exponents, one per alternation, and *Y_n* represents derived, of which there may be more than one. 3. Facultative *j* (i.e., intervocalic *j* preceding and/or following a front vowel; e.g., in *ije, eje*) is not transcribed. 4. References to this study are in the format *X:Y* where *X* is the relevant chapter number and *Y* the number of the section; thus, 2:2.1 refers the reader to section 2.1 of Chapter 2).

²The contribution to meaning of the qualifiers has not yet been adequately investigated. There will be no attempt to treat it in this study. For brief informal commentary, see Koneski 1967:394-404 and 382-386. The realizations of the prefixal root-qualifier are: *bez-, do-, iz-, na-, nad-, o-, ob-, od-, po-, pod-, pre-, pred-, pri-, pro-, protiv-, raz-, s-/so-, su-, u-, v-/vo-, voz-, z-, za-, and zo-*. The members of this set occur individually and in sequence. Each of the allomorphic relationships is unique distributionally. Apparently, phonological and stylistic considerations determine the occurrence of *v-/vo-*. According to Koneski (1967:394):

Vo našiot naroden jazik formata *vo-* se javuva pred dva konsonanta i pred *v*. Vo literaturniot jazik taa se srećava ušte vo nekoj slovenismi: *vooruži, voobrazi*, i dr. Sp. i se *vocarile mnogu caret vo Stambol* (M. Cepenkov).

translation: In the colloquial language, *vo-* appears before two consonants and before *v*. In the literary language, it is also found in certain Slavonicisms: *vooruži, voobrazi*, and others. Compare also: *se vocarile mnogu caret vo Stambol* (M. Cepenkov).

But the validity of this statement cannot be evaluated without investigation of the value of verbs like *vooruži* and *voobrazi* as Slavonicisms. We note, for example, that these two verbs are listed

without special notation in Koneski 1961-1966 while *vocari* is listed as archaic.

The facts seem less clear for *s-/so-*. Koneski (1967:403) states:

...ovoj prefiks se javuva retko vo oblikot *so-*. Pa i...poveketo se raboti za zborovi kniževni. Vo narodniot jazik se poznati formite *sobere* pokraj *zbere*, *sotre...*, *sozme~sozima*, *sošie*, *sostavl*.

translation:...this prefix rarely appears as *so-*. And most often, we find it in bookish words. In the colloquial language, the following items are found: *sobere* in addition to *zbere*, *sotre...*, *sozme~sozima*, *sošie*, *sostavl*.

It should be noted that at least two other allomorphic relationships, i.e., *o-/ob-* and *voz-/z-/zo-*, were inherited, and may still exist for some speakers although they are not recognized in the handbooks.

The realizations of the suffixal root-qualifier are: *-e-*, *-tr-*, *-ič-*, *-as-/es-/is-/os-/jos-*, *-av-/v-/uv-*, *-k-*, *-n-*, *-ol-*, and *-ot-*. The members of this set occur individually and in the sequences *-n-uv-*, *-e-uv-*, and *-Vs-uv-* where V represents *a*, *e*, *i*, or *(j)o*. Each of the allomorphic relations is unique distributionally, with the occurrence of allomorphs lexically defined. The analysis of the realization *-as-/es-/is-/os-/jos-* is problematic. This realization of the suffixal root-qualifier is foreign in origin, and occurs primarily with roots which are foreign, in lexicalized composita (see Koneski 1967:385-386). The evidence for division consists of a few stems (e.g., *crv-os+*) in which *-os-* or *-jos-* has been combined with a native root. We have assigned the vowel preceding *s* to the qualifier on the basis of such stems. There is no direct evidence for this interpretation with respect to vowels other than *o*, all of which seem to be restricted to stems with a foreign root (e.g., *kin-is+*, *nav-as+*, *ar-es+*).

³We make no attempt to include all of the features representing aspect, but note several of the better known and less vulnerable to dispute. For purposes of this study, only [imperfective] is of importance.

⁴The assumption in this study is that of the two aspects traditionally termed *perfective* and *imperfective*, the imperfective is marked and, when expressed morphologically, represented by *-av-/v-/uv-*, which is a realization of the suffixal root-qualifier. It has been customary to assume, following Jakobson's work on the Russian verbal system, that perfective is marked in all of the contemporary Slavic languages. Aronson 1977, however, argues for

marked status of the imperfective in Bulgarian. Within the framework of this study, there is evidence, to be considered later (see 3:1.3), suggesting the same for Macedonian.

⁵Macedonian, therefore, has two aspectual oppositions which concern us: one represented in the stem; and the other, in a constituent following the stem. Unless otherwise noted, the reference in this study is to the latter.

⁶The term *person indicator* is used for convenience although the constituent in question represents, in *portmanteau* fashion, number as well as person. Note our assumption that *singular* is marked in personal formations (i.e., those expressing the category of person), but *plural* in nonpersonal (i.e., those expressing the category of number but not person). For personal formations, we deviate from the standard interpretation that *plural* is marked because it is the singular which is restricted distributionally (e.g., the first person singular, which can refer only to the speaker). The plural, in contrast, is not restricted in this way (e.g., the first person plural, which can refer exclusively to the speaker or to the speaker and one or more nonspeakers).

⁷It should be noted that there is dispute concerning the feature representing status. This study follows Lunt 1952, in which the feature is [distanced]. For a different interpretation, see Friedman 1977:52-81. There is also dispute concerning the feature representing aspect, for which we have adopted [aorist]. Friedman (1977:21-51 and 190) surveys existing interpretations and presents his own. The feature representing status does not affect the analysis offered in this study, but that representing aspect does. We return to it later, in Chapter 4.

⁸To my knowledge, the features [circumstantial] and [participative] have not been used before in descriptions of Macedonian. Each specifies a relationship between two events: the former, that one event modifies another; the latter, that one is the subject of another. Thus, in terms of English glosses, forms which are [+circumstantial] can be translated by subordinate clauses beginning with *when*, *while*, *as*, etc. (e.g., *As he stood up, he noticed that he felt ill*), while those which are [+participative] can be translated by the so-called *gerund* (i.e., the form with *-ing*; e.g., *Standing was difficult for him*).

⁹This yields a semantic division according to the features [past], [distanced], [stative], [participative], and [circumstantial], which may, instead of word-level constituent structure, be the basis for subsystems.

¹⁰Note the reference here to *functional* specification. Thus, all word-level units which normally function as imperatives constitute a paradigm, as do all those which normally function as present. But the imperative of verbs with unextended conjugation (e.g., 2sg. *nosí* and 2pl. *nosete* from *nos+*; see 2:7.2.5.2) is not *morphologically* imperative within the framework of this study (i.e., the forms in question do not include a string expressing imperative meaning; see 2:3). Its forms are nevertheless realizationally distinct *as a set* from those of the present. Here we should mention that a parallel situation may not exist with regard to classification on the basis of [aorist] (i.e., such classification may yield — in the participle, adjective, noun, and/or adverb — a set of forms in aorist function identical to the set which occurs in imperfect. In such instances (e.g., *umrel*, etc. in the aorist and imperfect of the participle of *umr+*; see 2:7.2.4.2), we recognize only one paradigm with imperfect (i.e., [-aorist]) value.

¹¹Previous studies have assumed that nonpersonal formations are aspectual only in verbs with unextended conjugation, and, then, only if two sets of forms, one *aorist* and the other *imperfect*, are attested. We also assume the restriction of aspect in these formations to verbs with unextended conjugation, but, in contrast to previous studies, this one assumes that aspect is expressed *whether or not* there are two sets of forms. Thus, it differs from its predecessors primarily in the analysis of the adjective, which makes two sets of forms infrequently; the noun, which does so rarely; and the adverb, which does not make two sets. For discussion, see 3:1.2.1 and 3:1.2.2.

¹²Note these conventions: 1. We transcribe the string expressing 'Te.:pa.' as *f*. Technically, it is prescribed as *v*, with *f* an automatic realization reflecting constraints we have mentioned with respect to the implementation of [voice] in obstruents. Koneski (1967:124) notes, however, that past paradigms may attest *f* uniformly, indicating that *f/v* is being eliminated. 2. We transcribe the string expressing 'St.:dl.' as *l* although it occurs as *l'* in the plural, reflecting neutralization of the opposition of *l* to *l'* in favor of the latter before front vowels (i.e., *e* and *i*, the first of which occurs in the terminal suffix of the participle; see Lunt 1952:20 for comment on *l* and *l'*). This convention follows the general one we established for the transcription of automatic alternations (see 1:2.2, note 10). 3. The components of meaning expressed in portmanteau fashion are separated by a double colon (i.e., ::).

¹³These tables provide a somewhat simplified preview of desinential patterns (see 2:7), and are structurally, similar to the

table in 2:2.1, with columns representing verbal constituents as follows: 1 = E; 2 = M, A; 3 = T, R, S, X; and 4 = P, N. Here, however, the fourth column includes not only the realizations of terminal constituents (i.e., P and N), but those of nonterminal constituents, given in other columns, as well. Thus, the fourth column gives desinential strings in their entirety. The portion of these strings representing P and N can be determined by comparison with the entries of the first three columns. Note that there is only one type of extended conjugation, but there are several of unextended reflecting realizational differences in the desinence initial vowels of the present and past aorist. For the order of desinential strings, see note 20.

In presenting the conjugational unit here and elsewhere (e.g., 2:7.2), we use a combination of paradigms and formations as follows: *present*, *imperative*, *participle*, *adjective*, *noun*, and *adverb*, with *aorist* and *imperfect* distinguished in the relevant formations when appropriate. For convenience, we refer to the members of this inventory as *formations* although, technically, it includes present, imperative and aspectual paradigms.

¹⁴For this study, which assumes both category *and* feature as contributory to grammatical meaning (see 1:2.3, discussion), allomorphic relationships exist *only* when there is identity in feature content as well as categorial. Thus, for example, *o*, *a* and $\emptyset$ as strings expressing aspect are not related allomorphically to *e* because they specify [+aorist] while *e* does not. Similarly, *f* as a string expressing tense specified as [+past] is not related allomorphically to $\emptyset$, which leaves tense unspecified.

In stating distributions, we give formation first, followed by conjugation type (i.e., extended or unextended), followed by restrictions within formation. If there is no restriction, *all forms* appears. If there is no restriction in conjugation type, *all verbs* appears. Note that allomorphs of morphemes in A and M are restricted not only in conjugation type, but lexically as well. Thus, *a*, *o*, etc. in A *all* occur in verbs with unextended conjugation. Such verbs must therefore be specified for the allomorph they exhibit.

Four morphemes, although each with only one realization, have distributions which require special mention as follows: *e* meaning 'As.:un.' occurs not only in all imperfect forms (i.e., forms unspecified for aspect), but also in those aorist not exhibiting an allomorph of 'As.:ar.' (e.g., 2sg. *pase* in the aorist of *pas+*; throughout the past aorist of *umr+*); *j* meaning 'Mo.:iv.' occurs throughout the imperative, but only of verbs with extended conjugation; *f* meaning 'Te.:pa.' occurs only in the first person singular and personal plural forms of the past; and $\emptyset$ meaning 'Te.:un.' occurs not only in all present and

imperative forms (i.e., forms unspecified for tense), but also in those past not exhibiting *f* expressing 'Te.:pa.' (e.g., 2sg. *pase* in the aorist of *pas+*).

¹⁵See note 1 for the form of alternations. The alternation of zero with *t* is given twice because zero is underlying in some of its occurrences, but *t* in others (see 2:6.1.2). The alternation of *d* with $\emptyset$ included here is distinct from the automatic alternation of the same units mentioned in note 10 of Chapter 1.

¹⁶According to our assumptions (see 1:2.3, discussion of assumptions fifteen and sixteen), linked exponents are derived, and unlinked are underlying. Thus, each alternation is generated by a rule of the form $X \rightarrow Y/Z$, where *X* is the unlinked exponent, *Y* is the linked, and *Z* is the grammatical meaning, functioning as environment, to which linkage is implemented.

In addition to the traditionally recognized alternations listed in the preceding section, there is one other, *z/ž*, which is attested only in the root *-liz-/-liž-*, with *z* occurring in the presence of *-n-* (i.e., in *liz-n+*; cf. *liž+*, etc.). This distribution is also attested by *č/k* in *-molč-/-molk-* and *ž/g* in *-lež-/-leg-* (i.e., in *molk-n+* and *leg-n+*; cf. respectively, *molč+* and *lež+*).

¹⁷For each pattern, the alternations are listed together, with the distribution of the linked, or derived, exponent. For linkage to [+aorist], there is a division reflecting the occurrence of aorist paradigms in three formations: past, participle, and adjective. A blank in the table indicates occurrence of the unlinked exponent; a dash indicates the nonoccurrence of the paradigm. Thus, for example, in the case of Pattern 1, the information given can be summarized as follows:

1. The alternations attesting it are linked to [+aorist].
2. There are four subsets (i.e., *a*, *b*, *c*, and *d*), reflecting differences in the word-level forms attesting the linked exponent.
3. Verbs attesting *a* exhibit the linked exponent, which is *š*, in the participial aorist, and the unlinked exponent elsewhere. They do not attest an adjectival aorist; only an imperfect.
4. Verbs attesting *b* and *c* exhibit the linked exponent, which is *k*, *g*, or $\emptyset$, in all aorist forms, and the unlinked exponent elsewhere.
5. Verbs attesting *d* exhibit the linked exponent in the past aorist form, and the unlinked exponent elsewhere. There is no adjectival aorist.

The roots attesting patterns 1, 3, and 4 are given here for reference:

Pattern 1

<i>e/∅</i>	-mel-/-ml-
<i>o/∅</i>	-kol-/-kl-
<i>d/š</i>	-td-/-tš-
<i>m/d</i>	-zem-/-zed-
<i>i/∅</i>	-spl-/-sp-, -vrt-/-vr-
<i>č/k</i>	-plač-/-plak-, -suč-/-suk-
<i>ž/g</i>	-laž-/-lag-, -struž-/-strug-

Pattern 3

<i>č/k</i>	-peč-/-pek-, -reč-/-rek-, -seč-/-sek-, -teč-/-tek-, -tolč-/-tolk-, -vleč-/-vlek-
<i>ž/g</i>	-mož-/-mog-, -strž-/-strig-
<i>z/g</i>	°lez-/*leg-, -molz-/-molg-
<i>e/i/∅</i>	-ber-/-btr-/-br-, -der-/-dtr-/-dr-, -per-/-ptr-/-pr-, °stel-/*stl-/*stl-

Pattern 4

d/Ø

-dad-/-da-, -klad-/-kla-

Note the following:

1. The unlinked exponent of *ž/g* may appear for the linked in prefixed stems with -laž-/-lag- [pattern 1].
2. The alternation *i/Ø* is attested only for *zo-vri+/zo-vr+* among stems with -vri-/-vr- [pattern 1]; other stems attest -vri- in all forms.
3. The unlinked exponent of *č/k* and *ž/g* may appear for the linked in some imperfective stems with -vleč-/-vlek- [pattern 3]; e.g., *do-vleč-uv+* and *do-vlek-uv+*, both opposed aspectually to *do-vleč+/do-vlek+*.
4. The linked exponent of *e/i/Ø* is attested in the noun of stems with -ber-/-bir-/-br-, -der-/-dir-/-dr-, and -per-/-pir-/-pr- [pattern 3] as well as the past, participle, and adjective.

¹⁸The information on unextended conjugation, which begins in 2:7.2, is summarized in 2:7.2.13. In view of the large number of patterns of unextended conjugation, the reader may wish to consult the summary in conjunction with 2:7.2 for greater clarity. Note that relevant realizations of the mode and aspect indicator for unextended patterns are given as X:Y (e.g., *e:a*), where X denotes the dominant realization of the mode indicator in the present, and Y the dominant realization of the aspect indicator in the past aorist.

¹⁹In citing each pattern, we include the characteristics of stems which attest it. A bipartite notation is used, the left member of which describes the stem as *suffixed* (i.e., SF) or *unsuffixed* (i.e., US), and the right member of which provides the suffix for suffixed stems, and, for unsuffixed, describes the stem as *alternating* (i.e., AL) or *nonalternating* (i.e., NA). For unsuffixed stems with an alternating root, the pattern of alternation is noted.

²⁰Desinential strings are cited by formation, vertically, in the order: *present, imperative, past, participle, adjective, noun, and adverb*. Horizontally, the order of strings in the present is: 1sg., 2sg., 3sg., 1pl., 2pl., 3pl.; in the past: 1sg., 2/3sg., 1pl., 2pl., 3pl.; in the imperative: 2sg., 2pl.; and in the remaining formations: sg.m., sg.f., sg.n., pl. The omission of a formation means that there is no verb

exhibiting the pattern in question which attests it. Within aspectual formations, there are typically two sets of forms, the upper set *aorist*, and the lower *imperfect*. If the number of such sets is other than two, aspect can be determined from the realization of the initial segment: *a*, *i*, *o*, and the *absence of a vowel* signal *aorist*; *e* signals *imperfect*. When there are two sets, there is no implication that each verb with the pattern attests both. Some may attest only one (i.e., be unpaired in the relevant formation).

Note that the noun and adverb occur only for imperfective verbs. Of the verbs we use in exemplification, those which are prefixed are perfective; those which are unprefixed — except *piš+* and *dad+* — are imperfective.

²¹According to Koneski (1967:416), the imperative of stems with *-uv-* in the suffixal root-qualifier may — in addition to *-aj*, *-ajte* yielding *-uvaj*, *-uvajte* — attest *-j*, *-jte* with *j* appearing in the slot of *v*, yielding *-uj*, *-ujte* (e.g., *kažuj*, *kažujte*; cf. *kažuvaj*, *kažuvajte*; both paradigms are from *kaž-uv+*). This alternative does not appear in Tošev 1970.

²²Suffixed stems are not exemplified; they are always identical to unsuffixed stems without alternation (i.e., to US:NA), which are exemplified. Patterns exemplified with prefixed stems do not attest unprefixed ones. Note that the second line of paradigms requiring more than one is *indented* and *single-spaced*.

²³This unextended pattern has subtypes which differ in the participial aorist. The subtypes correlate in a well-defined way with the realization of stem-final segments, and are presented in terms of it.

²⁴Note that we specify forms of the imperative and aorist even when they are not distinct, respectively from forms of the present and imperfect (e.g., 2pl.iv. *metete* from *met+*; cf. 2pl.pr. *metete*). We do this because the basis for classification into paradigms is *functional* with respect to the features [imperative] and [aorist] (see 2:2.2.4).

²⁵A single stem, *striž+/strig+*, exhibits initial *a* as well as *e* (i.e., an aorist paradigm as well as an imperfect) in the adjective. Otherwise, stems with this pattern attest only *e* (i.e., an imperfect paradigm) in the adjective.

²⁶Note the absence of final *t*, reflecting the automatic loss of *t*, *d*, and *s* before *l*.

²⁷Note that *ld+* is an exception among stems with final *t* or *d*. It attests the desinential pattern of stems with other finals.

²⁸Stems with *-zna-* attest *-m* as well as *-am* in the first person singular present (e.g., *znam* and *znaam* from *zna+*). The stem *do-žni+* and stems with *-tka-* attest an aorist paradigm in the adjective.

²⁹According to Koneski 1967:405-406, there are verbs identical to *nos+* except in aorist paradigms, where they exhibit *e* instead of *i* (e.g., *iz-gor+*, for which Koneski cites first person singular past aorist *izgoreŕ*). Tošev 1970 cites all such verbs in a format identical to that of *nos+*, from which we infer that *i* is prescribed in the aorist.

³⁰The remaining types combine preceding ones in the present (e.g., *i//e:e*), past aorist (e.g., *e:i//o*), both (e.g., *i//e:i//a*), or they combine a present with a past aorist different from the one with which it is commonly associated (e.g., *i:o*; *i* in the present usually correlates with *i* in the past aorist). Each of these types is rare, with *i:a*, *i:o*, *e:i//o*, *i//e:e*, and *i//e:i//a* apparently restricted to the verb cited for exemplification, or to verbs attesting the relevant root.

³¹According to Koneski (1967:416), unsuffixed stems with the root *-drž-* may exhibit *-Ø*, *-te* as well as *-l*, *-ete* in the imperative. This usage is not sanctioned in Tošev 1970, which gives only the forms with *-l*, *-ete*.

³²All stems in this class exhibit *č*, *ž*, or *o* in final position. Only *do-služ+/do-slug+* exhibits alternation.

³³We omit the realization of the present because it is specified in the heading of 2:7.2.13.1 and 2:7.2.13.2. Note that realizational differences occur only in aorist paradigms. In the imperative and imperfect, verbs with unextended conjugation are identical.

³⁴An asterisk following the example indicates the possibility of alternation. If the example itself exhibits alternation, there is no verb attesting the relevant pattern without it.

³⁵In suffixed verbs with unextended conjugation, we use ** to separate *-E* denoting unextended conjugation from the bipartite notation we have established to denote pattern of conjugation.

CHAPTER 3

DISCUSSION

1 Syntagmatic Organization

We have assumed thirteen verbal constituents: *stem*, *root*, *prefixal root-qualifier*, *suffixal root-qualifier*, *extender*, *aspect indicator*, *mode indicator*, *tense indicator*, *result indicator*, *status indicator*, *taxis indicator*, *person indicator*, and *number indicator*. Our discussion of them begins with the stem and its components, following which we turn to the remaining constituents, each considered within the context of formations and paradigms exhibiting it. Throughout our discussion, we proceed from diachronic evidence for the existence of boundaries in word-level units. Such evidence provides a basis for the identification of morphemes and, from their meaning, the constituents they represent.¹

1.1 Stem

1.1.1 Claims

1. The verbal stem defined with respect to the word-level form labeled *third person singular present* (i.e., the form expressing [-past, -imperative, -plural, -personal]) subsumes all segments preceding final V.²

2. The verbal stem is comprised of three constituents, one radical and two grammatical. The latter surround the former.

1.1.1.1 Claim 1

Evidence for the segmental extent of the verbal stem is available in new word-level units which are *nonverbal* (i.e., nominal or adjectival), but similar in realization and meaning to verbal forms; e.g., the noun *baknež* 'kiss',³ related to 1sg.pr. *baknam*, 2sg.pr. *bakneš*, etc.; the noun *pogled* 'glance', related to 1sg.pr. *pogledam*, 2sg.pr. *pogledaš*, etc.; the noun *izgor* 'heat', related to 1sg.pr. *izgoram*, 2sg.pr. *izgoriš*, etc. If the similarity between verbal forms and nonverbal is not a coincidence, the latter must have arisen via extension of a pattern of constituent structure in which the initial unit expressed an event. The extent of this unit,

which we have termed *verbal stem*, can be sought in any given instance by comparison of the new units with one or more of the verbal forms related to it segmentally and semantically. With the third person singular present as a reference point, a series of such comparisons (e.g., the noun *nosáč* 'porter' from *nos+* with 3sg.pr. *nosi*; the noun *jadač* 'glutton' from *jad+* with 3sg.pr. *jade*; and the noun *gledáč* 'spectator' from *gled+* with 3sg.pr. *gleda*), yields a consistent correlation only through the segment immediately preceding the final vowel (e.g., through *s* of 3sg.pr. *nosi*; through *d* of 3sg.pr. *jade* and *gleda*), i.e., there is no segment beyond the penultimate one of the third person singular present which consistently correlates in its realization with a segment in derived forms. We have therefore assumed that the penultimate segment of the third person singular present is stem-final. This conclusion fits well with our examination of other segments, to which we turn below, and for which grammatical function in most instances is evident.⁴

1.1.1.2 Claim 2

Evidence for structure internal to the verbal stem is provided by new stems (e.g., *crvos+*, *zaangažir+*, *proanalizir+*),⁵ which must reflect the extension of patterns of stem-level constituent structure and, therefore, exhibit new combinations of existing morphemes. The identification of such morphemes is possible via comparison of new stems with old which are partially alike in form and meaning. Thus, comparison of *iznesuv+* with *iznes+* and *nes+*, both of which were members of *C₁* at the time *iznesuv+* arose and which are similar to it in form and meaning, suggests independent status for the strings *iz*, *nes*, and *uv*, and, by implication, at least two boundaries and three slots in the verbal stem. A number of such comparisons supports a tripartite stem structure, leaving virtually no doubt that the medial slot is radical, and the marginal ones grammatical.⁶ There is no evidence to suggest the existence of other slots within the stem, or that any of the three we have identified exhibits more than a single constituent. But the precise contribution to meaning of the grammatical constituents remains uncertain pending thorough semantic analysis of the strings which fill them. For this reason, we have adopted the general term *qualifier*, which is neutral with respect to semantic content, but reflects the contribution of these morphemes as modifiers of

the morphemes they surround.⁷

1.1.2 Excursus on the Stem Structure Proposed in Previous Studies⁸

There is no discussion of constituent structure *per se* in previous studies, but there is some attention to the verbal stem, which is assumed to exist, reflecting the understanding that verbal forms exhibit, by definition, a constituent expressing an event. There is disagreement, however, on the number of slots in this constituent. Koneski 1967:409-411 claims three; Usikova 1967:54 and Lunt 1952:68-69, four. The three claimed by Koneski and three of the four claimed by the others are those we have established (i.e., the qualifiers and root), and so require no discussion. The fourth slot in Usikova and Lunt is occupied by the segment which, in this study, immediately follows the verbal stem, and manifests what we have termed *extender*, *aspect indicator*, or *mode indicator*.⁹ The analysis of this segment is disputed. Lunt assigns it to the stem except in the third person plural present and the imperative of verbs with unextended conjugation (e.g., *a* in 3pl.pr. *nosat* from *nos+*, and 3pl.pr. *tresat* from *tres+*; *i* in 2sg.iv. *nosi* from *nos+*, and 2sg.iv. *tresi* from *tres+*), as well as the first person singular present of all verbs (e.g., *a* in 1sg.pr. *nosam* from *nos+*, 1sg.pr. *tresam* from *tres+*, and 1sg.pr. *gledam* from *gled+*). Thus, segmentally all verbs have at least two realizations of the stem, which are canonically CV(C)+ and CV(C)-V+ (e.g., *gled+/gled-a+*).¹⁰ This analysis opposes Lunt to Usikova, who assigns the segment in question to the stem in *all* forms of verbs with extended conjugation, but only in those of the aorist paradigms of verbs with unextended. Thus, verbs with extended conjugation have a single realization of the stem, which is canonically CV(C)-V+, where V is *a* (e.g., *gled-a+*). Verbs with unextended, in contrast, have at least two, canonically CV(C)+ and CV(C)-V+ (e.g., *piš+/piš-a+*), with CV(C)+ termed the *present* stem; and CV(C)-V+, the *aorist*.

The primary motivation for the structures proposed by Usikova and Lunt may well have been the absence of well-defined patterns of recurrence among realizations of the segment immediately following the three undisputed constituents of the stem (i.e., the lexical morpheme and the surrounding grammatical morphemes), as a result of which the standard procedure of assigning meaning to recurring

strings on the basis of their distribution could not be implemented as it could, for example, in the analysis of desinential consonants in nonpersonal formations. Each nonpersonal formation exhibits a desinential consonant or string of consonants unique to it (e.g., *l* in the participle, *n/t* in adjective), which can therefore be assigned formational meaning. But, in the segment which concerns us, *e* among verbs with unextended conjugation occurs in some forms of present, imperative, and aorist paradigms, as well as all forms of imperfect; *o* occurs in some forms of aorist paradigms; *l*, in some forms of present and aorist, etc. Synchronically, there is no way to know, or to speculate on a principled basis, which of these realizations, if any, are semantically identical. Usikova and Lunt may have resolved the problem by assigning all of them to the stem. Usikova, however, was, without doubt, also influenced by preconceived notions of stem structure, and also, perhaps, by the belief that patterns of conjugation should be predictable from the composition and realization of verbal stems. She notes (1967:54) that Slavic verbs are traditionally classified in terms of two stems, one of which includes the past aorist realization of the segment immediately following the undisputed constituents:

Klassifikaciju glagola v makedonskom jazyke ne racional'no stroit' isključitel'no na različijax meždu tematičeskimi glasnymi, vystupajuščimi v raznyx formax odnogo glagola. Neobxodimo takže učityvat' sootnošenija meždu osnovami glagola, ix nesovpadenie ili toždestvo. Izvestno, čto v drugix slavjanskix jazykax pri klassifikaciji obyčno isxodjat iz naličija dvux glagol'nyx osnov — osnovy nastojaščego vremeni i infinitivnoj (aoristnoj) osnovy.

translation: Verbal classification in Macedonian is not efficiently implemented solely on the differences among the thematic vowels appearing in the forms of the verb. The relationship between the bases of the verb — their identity or nonidentity — must also be considered. It is well known that in other Slavic languages, verbal classification usually takes as its point of departure two verbal bases — the base of the present, and that of the infinitive (aorist).

Since she had not, for unstated reasons, associated any of the

realizations of this segment with grammatical meaning, there was nothing to dissuade her from adopting the standard interpretation of Slavic verbal stems for Macedonian. This interpretation had special appeal if, in fact, it was her intention to create verbal stems from which patterns of conjugation were predictable because these patterns differ only in realizations of the disputed segment.

Lunt, in contrast, was influenced by a practical concern: he was attempting to establish a new citation form of the verb.¹¹ Previously, following Bulgarian and Greek tradition, Macedonian dictionaries had used the first person singular of the present in this capacity. Lunt's objective was to replace this relatively unrevealing dictionary form with one from which more, or all, of the pattern of conjugation could be inferred. He undoubtedly believed that the new citation form, to be acceptable, had to be a member of the present paradigm, like the form it was replacing. The third person singular was chosen probably because he assumed, correctly although without justification, that it lacks segments representing the categories of person and number, and can therefore be construed as a realization of the verbal stem if no grammatical meaning is assigned to the segment immediately following the undisputed constituents (i.e., to the disputed segment). Since he assigned no such meaning, there was nothing to prevent Lunt from adopting this interpretation and assuming it, with respect to the disputed segment, for almost all forms of the conjugational unit.

We should note in conclusion that, although Koneski rejected a stem structure including the disputed segment, he did not do so on a principled basis. That is, he did not determine the realizations of this segment to be associated with grammatical meaning and conclude, therefore, that they should *not* be assigned to the stem. His rejection of the stem structure suggested by Usikova and Lunt is based firmly on preconceived notions of acceptable stem structure. According to Koneski (1967:410):¹²

...Inaku meѓu opštiot del i nastavkata se javuva nekaov vokal što gi svrzuva. Ovde ideme do eden tret važen poim vo odnos na stroežot na formite, toa e poimot za *osnovniot vokal*. Uobičaeno e da se govori za nekoj osnovi na glagolot, što pretstavuvaat celost od opštiot del i osnovniot vokal. Se govori popravo za osnova na segašното vreme (prezentska osnova) i za osnova na

minato svršeno vreme (aoristna osnova). No podrobno e da se ostanuva samo na poimot na osnovniot vokal. Zašto, ako govorime za prezentska i aoristna osnova, togaš so isto tolku pravo treba da se govorime za imperfektna i imperativna osnova, bidejki samo so nategaše možeme da go svrzuvame obrazuvañeto na imperfektot i imperativot so osnovite so koi obično se operira (prezentskata i aoristnata). Od druga strana i kaj sekoja od ovie osnovi treba da izdeluvame 'podosnovi' bidejki, na primer vo minato svršeno vreme, edni lica se javuvaat so eden, drugi so drug vokal: *reko-v*, *reče*. Najposle poimot osnova nema nikakva smisla vo primena kon najbrojnata glagolska grupa vo našiot jazik — a-grupa. Toa što tuka bi go narekle prezentska ili aoristna ili kakva da e druga osnova vsušnost se sveduva samo na eden edinstven del: *vika-m*, *vika-v*, *vika-j*. Seto ova ni svedoči deka e podobro da operirame so terminot osnoven vokal odošto so terminot osnova. Vo takov slučaj faktičkrite razliki što se javuvaat pri svrzuvañeto na opštiot del so nastavkata nema da se zatemnuvaat so nazivi što možat da podadat izgled na nestvarna edinstvenost.

translation: However, between the general verbal base and the suffix, there is a connecting vowel. This brings us to a third important concept in verbal morphology, that of the *base vowel*. It is usual to speak of certain *bases* of the verb, which are comprised of the general verbal base and the base vowel...specifically, the *present* base and the *aorist* base. But it is preferable to restrict ourselves to the concept of base vowel because if we establish a present and an aorist base, we must then, with equal justification, establish an *imperfect* and an *imperative* base since the morphology of the imperfect and imperative cannot be dealt with satisfactorily in terms of the bases characteristic of the present and aorist. Furthermore, we must recognize subbases for each of the bases because, in the past aorist, for example, the forms exhibit different base vowels: *reko-v*, *reč-e*. Finally, the concept of the base has no meaning with respect to verbs with extended conjugation. The bases for such verbs, whether we recognize two or more than two, are identical: *vika-m*, *vika-v*, *vika-j*. All of this should persuade us that it is better to operate with the concept of *base vowel* than with that of *base*. Within this

framework, the differences which appear in the vowel connecting the general verbal base with the suffix are not confused with names that suggest indivisible wholes.

But Koneski, like Usikova, provides no justification for his stem structure other than *a priori*. The uniformity of verbs exhibiting extended conjugation, for example, is not relevant to the adequacy of Usikova's proposal, except in Koneski's judgment. There is no reason in principle to assume that Macedonian verbs exhibit a single stem structure and thus to reject analyses which posit more than one. Nor would the need to recognize subbases (i.e., *podosnovi*) be of any relevance in an objective evaluation of Usikova's analysis. It is the existence of deverbal creations which supports Koneski's stem structure and argues against the others since realizations of the disputed segment are not present in such creations on a consistent basis, but presumably would be if they were indeed part of the constituent expressing events.

1.2 Segments Following the Stem

Following the stem in extended conjugation, we have assumed one boundary yielding two slots, two boundaries yielding three slots, or three boundaries yielding four slots:¹³

boundaries	slots	structure
1	2	EX
2	3	ETP ESN ERN EXN
3	4	EMTP

In unextended conjugation, we have assumed one boundary yielding two slots or two boundaries yielding three:

boundaries	slots	structure
1	2	AX
2	3	MTP ATP ASN ARN AXN

These were integrated into a grid of four positions,¹⁴ in which all instances of first position in verbs with unextended conjugation, some instances of second position in verbs with extended, and some of fourth position in all verbs were left open reflecting the absence of a constituent. Thus:

1	2	3	4	occurrence
E	M	T	P	EX: np.
E	—	T	P	EX: pa.
E	—	S	N	EX: pt.
E	—	R	N	EX: aj.
E	—	X	N	EX: no.
E	—	X	—	EX: av.
—	M	T	P	UX: np.
—	A	T	P	UX: pa.
—	A	S	N	UX: pt.
—	A	R	N	UX: aj.
—	A	X	N	UX: no.
—	A	X	—	UX: av.

The evolution of the verbal system does not provide sufficient evidence for the division of *each* desinential string, but with extrapolation, there is enough for the formulation of a number of hypotheses which permit a comprehensive analysis, if tentative, in some respects. The constituent structure of the participle and adjective will serve as our point of departure because the evidence for division in them

seems least vulnerable to dispute, and is helpful in the discussion of other formations. First, however, we will consider an assumption which transcends individual formations, and is therefore best introduced independently of them:

A boundary follows all initial vowels in desinential strings.

It follows that all initial vowels are morphemes manifesting some constituent expressing some category. The existence of this boundary cannot be demonstrated for every form of the conjugational unit, but is justified in a number of them by several innovations, one of which requires minimal background, and so can be considered now.

The relevant contemporary forms are *zbogumte*, *elate*, and *ajdete*, which serve respectively as plurals of nonverbal *zbogum* 'good-bye', *ela* 'come', and *ajde* 'go'. These plurals are new, and can be attributed only to the extension of a pattern of constituent structure of the form {X + *te*}, where *te* is a morpheme expressing person and/or number, and X is a constituent or sequence of constituents compatible with such meaning. This pattern was available only in the verbal system, and, then, only in the second plural of personal formations. Thus, we can be certain a boundary precedes *te* in this form, and, by implication, that a boundary follows the segment preceding *te*. In the present, *te* is preceded by a vowel, *a* among verbs with extended conjugation (e.g., 2pl.pr. *gledate* from *gled+*); *i* (e.g., 2pl.pr. *nosite* from *nos+*), or *e* (e.g., 2pl.pr. *pišete* from *piš+*) among those with unextended. The same is true of the imperative of verbs with unextended conjugation and a consonant in stem-final position (e.g., 2pl.iv. *nosete* from *nos+*; 2pl.iv. *pišete* from *piš+*). Hence, in these forms at least, we can be certain that initial vowels of desinential strings are followed by a boundary. Since *a* is the only such vowel in verbs with extended conjugation, we have assumed it is independent throughout the conjugational unit, functioning as an indicator of the part of speech, or *affiliation*, of the preceding string, which is verbal in this regard. We have therefore assigned it the meaning 'Af.:vb.'. We have not, however, included it within the stem proper because there is no reason to do so on the basis of deverbal forms, which either lack it (e.g., *pogled*; cf. 1sg.pr. *pogledam*, etc.); or, if they attest it, are not unique in this

regard (e.g., *gledač* like *jadač*, although *jad+*, unlike *gled+*, does not exhibit extended conjugation). Among other verbs, we can reasonably assume the independence of initial vowels in the present and imperative extrapolating from the evidence of the second person plural, and assuming structural uniformity in desinential strings (i.e., the structure {V + X}, where V represents initial vowels, and X represents a constituent expressing person and/or number). This leaves for consideration the independence of the vowel in the past and nonpersonal formations of verbs with unextended conjugation, as well as the *meaning* of the vowel in *all* formations of such verbs.

1.2.1 Participle and Adjective

1.2.1.1 Desinential Strings

string	occurrence
VC	sg.mc.
VCV	sg.fm., sg.nt., pl.

1.2.1.2 Claims

1. Initial vowels are morphemes manifesting a constituent which expresses aspect.¹⁵
2. Consonants are morphemes manifesting a constituent which expresses status or resultativity.
3. Final vowels are morphemes manifesting a constituent which expresses number. The singular allomorphs of this morpheme are distributed by gender.

1.2.1.2.1 Claim 1

The independence of initial vowels and their function in the participle and adjective of verbs with unextended conjugation can be inferred from the occurrence in these formations of forms expressing aspect, some of which are new, the result of incremental innovation. Historically, each of the formations in question had only a single set of forms, which

was nonaspectual. We must therefore assume that the inherited forms were compatible with aspect, which was extended to them, resulting, under certain circumstances, in the evolution of new word-level units to complement them (i.e., to express the specification of the feature representing aspect not expressed by the inherited forms). Two observations on the contemporary system and its evolution are relevant in this regard:

1. Paired participial and adjectival forms differ only in the initial desinential segment, where *e* in the imperfect paradigm is opposed to *a*, *i*, *o*, or zero in the aorist (e.g., in the participial singular masculine: *tresol* in the aorist versus *tresel* in the imperfect of *tres+*; *pišal* in the aorist versus *pišel* in the imperfect of *piš+*; *nosil* in the aorist versus *nosel* in the imperfect of *nos+*; *bil* in the aorist versus *biel* in the imperfect of *bi+*). Forms with *a*, *i*, *o*, or zero were inherited; those with *e* are new.¹⁶

2. Unpaired participial and adjectival forms, which we have assumed to be imperfect contrary to the traditional assumption that they are nonaspectual, generally exhibit *e* in the initial segment of the desinence (e.g., in the participial singular masculine: *umrel* from *umr+*; in the adjectival singular masculine: *umren* from *umr+*; *nosen* from *nos+*; *bien* from *bi+*). All such forms were inherited.¹⁷

Thus, the extension of aspect was implemented via incremental innovation which gave rise to new word-level units (e.g., new participial *pišel*, etc. from *piš+*; new participial *nosel*, etc. from *nos+*), all imperfect, opposed to inherited ones vocally, in the initial segment of desinential strings (e.g., old participial *pišal*, etc. from *piš+*; old participial *nosil*, etc. from *nos+*). We therefore infer the independence of initial vowels because new desinential strings could have arisen only through combination of *e*, already attested in the past imperfect (e.g., 1sg. *pišef*, etc. in the past imperfect of *piš+*; 1sg. *nosef*, etc. in the past imperfect of *nos+*), with *i*, *la*, *lo*, and *le*. Since the new forms differ from the old just in aspectual and vocalic oppositions, we have assumed that initial vowels express aspect, with *e* expressing 'As.:un.', and the remaining realizations 'As.:ar.'.

But we have also claimed that the initial vowel of unpaired forms expresses aspect; specifically, that *e* in such

forms (e.g., adjectival *nosen*, etc. from *nos+*), like *e* in the forms which have evolved (e.g., participial *nosel*, etc. from *nos+*) is a morpheme with the meaning 'As.:un.', as a result of which the forms exhibiting it are imperfect although there are no aorist forms to complement them. This interpretation follows from two peculiarities, neither of which has been explained systemically heretofore:

1. The forms in question have remained unpaired despite the availability of vowels (i.e., *a*, *i*, and *o*) for complementary, aorist forms.
2. The forms in question exhibit *e*, unlike forms which evolved partners. All such forms exhibit, and exhibited, *a*, *i*, *o*, or zero.

We must therefore conclude that inherited initial *e* (e.g., in adjectival *nosen*, etc. from *nos+*) was, in some sense, incompatible with the evolution of complementary forms, but that other realizations of the initial segment (i.e., *a*, *o*, etc.) were not. Assuming that unpaired *e* — like *e* in new participial and adjectival forms — means 'As.:un.', and that, as a result, the forms which exhibit it (e.g., adjectival *nosen*, etc. from *nos+*) are imperfect like the new forms, we can attribute the contemporary pattern in the participle and adjective to *markedness*. Since forms with *a*, *i*, *o*, or the absence of a vowel were aorist, they were marked, and therefore impermissible in certain contexts. This follows from the definition of *marked as specified* for a certain category. New forms with initial *e* and imperfect meaning were added to complement them for that reason. But participial and adjectival forms which inherited *e* were imperfect, and therefore unmarked, which made them compatible with *all* aspectual contexts.¹⁸ This follows from the definition of *unmarked as unspecified* for a category. Complementary forms with imperfect meaning were unnecessary, as were such forms with aorist meaning, and no new forms evolved.

Thus, although the traditional assumption that unpaired participial and adjectival forms are nonaspectual is possible from a purely synchronic perspective because there is no reason in principle why participial and adjectival forms among verbs with unextended conjugation should be structurally identical with respect to categories represented in segments following the stem,¹⁹ it is less feasible diachronically because it leaves unmotivated the failure of forms which

inherited initial *e* to evolve partners.

1.2.1.2.2 Claim 2

Having considered initial vowels in the participle and adjective of verbs with unextended conjugation, we are left with two segments, one consonantal and one vocalic, which occur in the participle and adjective of all verbs, regardless of conjugation. In the contemporary language, the vocalic segment exhibits three overt realizations per formation: *a* and *o* in the singular of both participle and adjective, *i* in the plural of the adjective, and *e* in that of the participle. This segment inherited three realizations in the plural: *i*, *y*, and *a*. Thus, differences in its realization have been eliminated within the plural, from which we infer the existence of at least one morpheme in addition to that expressing aspect.²⁰ The meaning of this morpheme must be compatible with the forms exhibiting it, and so can only be the category of number specified as [+plural], which we have assigned it. On this basis, we have assumed that *o*, *a*, and the absence of a terminal vowel in the singular also express the category of number, but unspecified. They were therefore assigned the meaning 'Nu.:un.' although, in principle, it could be assumed that they express gender as well as number. In this regard, we note that the interpretation we have adopted does not claim that gender is not imparted, but only that it is imparted *distributionally*, via the environments associated with allomorphs of the morpheme we are considering, and not via the semantic content of the morpheme.

In the contemporary adjective, the consonantal segment is *n* or *t* distributed complementarily with respect to the specification of [nasal] in the stem-final segment. If this segment is [+nasal], the adjective exhibits *t* (i.e., a segment which is [-nasal]; e.g., in *padnat*, etc., the adjectival forms of *pad-n*); if it is [-nasal], the adjective exhibits *n* (i.e., a segment which is [+nasal]; e.g., in *greben*, etc., the adjectival forms of *greb*+). This distribution was not inherited,²¹ but the result of two innovations:

1. elimination of *n* versus *t* in favor of *t* among stems which inherited *n* and [+nasal] in the final segment; and
2. elimination of *n* versus *t* in favor of *n* among stems which inherited *t* and [-nasal] in the final segment.

The occurrence of these modificational eliminations combined with the knowledge that preceding and following segments belong to different morphemes implies morphemic status for *n* and *t*, to which we have assigned the meaning shared by forms exhibiting them: 'Re.:sv.'. We have treated *l* in the same way, assigning it 'St.:dl.' on the basis of identity between the participle and adjective in the canonical shape of desinential strings. There are no historical phenomena attesting directly to its morphological independence.

1.2.2 Noun and Adverb

1.2.2.1 Desinential Strings

string	occurrence
VCV	noun
VCCV	adverb

1.2.2.2 Claims

1. Initial vowels are morphemes manifesting a constituent which expresses aspect.
2. C in the noun and CCV in the adverb are morphemes manifesting a constituent which expresses taxis.
3. Final V in the noun is a morpheme manifesting a constituent which expresses number.

1.2.2.2.1 Claim 1

Traditionally, the noun and adverb, made only if the verbal stem is imperfective, have not been considered aspectual, undoubtedly because they do not exhibit more than a single paradigm. The universal occurrence of initial *e* in the desinential strings of these formations among verbs with unextended conjugation (e.g., *pasejki* in the adverb of *pas+*; *pišejki* in the adverb of *piš+*; *nosejki* in the adverb of *nos+*), however, suggests otherwise, especially since the noun and adverb are nonpersonal, and are thus grammatically identical to the participle and adjective in this sense.²² Historically, the segment immediately following the stem in nominal and

adverbial forms of the verbs in question was *a* or *e* (i.e., the nominal and adverbial forms of some verbs with unextended conjugation exhibited initial *a*; e.g., *pišajki* in the adverb of *piš+*; those of others exhibited initial *e*, e.g., *nosejki* in the adverb of *nos+*). The universal occurrence of *e* synchronically could be attributed to the elimination of an alternation, i.e., *a/e*, within both formations, but there is no apparent motivation for this interpretation in view of the retention of alternation in the initial segment of other formations (e.g., the present). Our analysis of the participle and adjective, however, provides an alternative. We can assume that the category of aspect was extended not only to them, but to the noun and adverb as well; i.e., to *all* nonpersonal formations. Thus, we assume that initial *a* in the noun and adverb was a morpheme with the meaning 'As.:ar.', and *e* a morpheme with the meaning 'As.:un.'. Forms with initial *a* were therefore marked. As a result, they were incompatible with certain contexts, which motivated the evolution of complementary, unmarked forms with initial *e* and imperfect meaning. In contrast, forms with initial *e* were assigned imperfect meaning, and were therefore unmarked. As a result, they were compatible with all contexts. Complementary forms were therefore unnecessary, and did not evolve.

However, the noun and adverb, unlike the participle and adjective, *always* present the event in progress, and are therefore generally incompatible with aorist aspect.²³ Accordingly, we may assume, forms with initial *a*, which exhibited a morpheme assigned aorist meaning, were not used and, with time, ceased to exist. Only the forms with *e*, which are unmarked for aspect and therefore compatible with the presentation of events in progress have remained. Thus, the universal occurrence of desinence initial *e* in the noun and adverb interpreted diachronically can be considered evidence for a constituent representing aspect identical to that in the participle and adjective of the verbs in question.

1.2.2.2.2 Claims 2 and 3

There is no reason to claim further division within the adverb. If CCV has any meaning, it must be taxis manifested by the feature [circumstantial]; i.e., the only meaning expressed by the adverb in addition to aspect. There is reason to claim further division within the noun: universal occurrence of *ñ* as the realization of C. Historically, this segment

exhibited *t* as well as *ñ*. The alternation was eliminated in favor of *ñ*, revealing the existence of a morpheme. Since alternation in the following, vocalic segment remained, and we have determined that the preceding segment is morphologically independent, we must conclude that *ñ/t* was independent, and that *ñ*, its reflex, is as well. The only meaning compatible with *ñ*, which occurs throughout the nominal paradigm, is taxis manifested by the feature [participative]. We have assumed this interpretation. We have assigned number manifested by [plural] to the vowel following *ñ* since this is the only meaning expressed by the noun not yet assigned. It should be noted in conclusion that non-personal formations exhibit a single, uniform structure within the framework we have established: a constituent expressing aspect, which is restricted to verbs with unextended conjugation, a constituent expressing formation, and, in formations expressing number, a constituent representing this category.

1.2.3 Past

1.2.3.1 Desinential Strings

string ²⁴	occurrence
(V)C	1sg.ar., 1sg.ip.
(V)	2sg.ar., 3sg.ar.
(V)CCV	1pl.ar., 2pl.ar., 1pl.ip., 2pl.ip.
(V)V	3pl.ar., 3pl.ip.
VCV	2sg.ip., 3sg.ip.

1.2.3.2 Claims

1. Initial vowels are morphemes manifesting a constituent which expresses aspect.
2. Instances of C realized as *f* manifest a constituent which expresses tense.
3. Remaining segments are morphemes

manifesting a constituent which expresses person and number.

1.2.3.2.1 Claim 1

In our discussion of the nonpersonal formations of verbs with unextended conjugation, we did not consider the reason for differences in meaning among the initial vowels of desinential strings (i.e., the unspecified aspectual content of *e* versus the aorist content of other vowels and the absence of a vowel). We also ignored consideration of the motivation for extension of the category of aspect to these formations.

Historically, the category of aspect was expressed only in the past, which must therefore have been relevant in the extension of this category to the participle, adjective, noun, and adverb. Examination of the realizations of the initial desinential slot inherited by paradigms of the past leaves virtually no doubt that this is true. Considering the aorist and imperfect paradigms of the past together, which preserve the inherited patterns of realization in the desinence initial segment, we find that *e* in the imperfect is opposed to *a* (e.g., 1sg.ar. *pišaf*, etc. from *piš+*; cf. 1sg.ip. *pišef*, etc.), *i* (e.g., 1sg.ar. *nosif*, etc. from *nos+*; cf. 1sg.ip. *nosef*, etc.), *o* (e.g., 1sg.ar. *pasof*, etc. from *pas+*; cf. 1sg.ip. *pasef*, etc.), *e* (e.g., 1sg.ar. *umref*, etc. from *umr+*; cf. 1sg.ip. *umref*, etc.), or the absence of a vowel (e.g., 1sg.ar. *bif*, etc. from *bl+*; cf. 1sg.ip. *bief*) in the aorist. Thus, *a*, *i*, *o*, and the absence of a vowel are *restricted* to aorist forms in the past, but *e* occurs in forms of the imperfect as well. This pattern differs in only one respect from the pattern which evolved among nonpersonal formations as a result of the extension of aspect: in nonpersonal formations, *e* is restricted to forms of the imperfect. Hence the difference in meaning between *e* and other realizations of the slot in question can be attributed to distribution. Since *a*, *i*, *o*, and the absence of a vowel were restricted to aorist forms in the past, they were interpreted as realizations of a morpheme with the meaning 'As.:ar.', reflecting the marked status of the aorist. In contrast, *e*, which was not restricted in distribution, was interpreted as a morpheme with the meaning 'As.:un.'. Subsequently, initial *a*, *i*, *o*, *e*, and the absence of a vowel in nonpersonal formations were identified with their counterparts in the past, as a result of which they were analyzed, like their counterparts, as morphemes expressing the category of aspect represented by the feature [aorist]. This

was the impetus for the evolution of new, imperfect forms in nonpersonal formations.

But, why was the category of aspect extended to the participle, adjective, noun, and adverb, and not to the present and imperative, which also exhibited vowels in the slot immediately following the stem? Apparently, the past and nonpersonal formations constituted a paradigmatic unity. The problem, then, is to define the basis for this unity, without which it is impossible to maintain the interpretation we have proposed. The attribute in common to the past and nonpersonal formations which opposes them to the present and imperative is a realizational one: they all exhibit a consonant or consonants *unique* to them following a vowel which is desinence initial: *f* in the past, *l* in the participle, *n/t* in the adjective, *ñ* in the noun, and *jk* in the adverb. The present and imperative exhibit no such consonant. They attest only *m*, *t*, *š*, and *j* as a variant of *i*, all of which are attested in the past and/or nonpersonal formations as well, while *f*, *l*, *n/t*, *ñ*, and *jk* are restricted to their respective formations. In the nonpersonal formations, vowels preceding these consonants were evidently "open" in the earliest period of the language, reflecting the representation of all grammatical meaning expressed by these formations in segments following: resultativity, status, and taxis in the consonants themselves; and number in terminal vowels. Since initial vowels in these formations were identical to restricted vowels in the past (e.g., *pišal*, etc. with *a*, in the participle of *piš+*; cf. 1sg.ar. *pišaf*, etc. also with *a*), they were susceptible to interpretation as manifestations of a morpheme expressing aspect. Forms of the present and imperative were not part of the paradigmatic unity in question because they did not meet the requirement for inclusion (i.e., a consonant or consonants unique to them). Accordingly, their initial vowel was not susceptible to this interpretation. Since the recurring consonantal string was crucial, we have assumed that the past and nonpersonal formations of *all* verbs, regardless of conjugation type, constitute a system although, among verbs with extended conjugation (e.g., *gled+*), aspect could not be extended because it was not expressed morphologically in the past (e.g., 1sg. *gledaf*, with desinential initial *a*, in both the aorist and imperfect of *gled+*).

1.2.3.2.2 Claims 2 and 3

We have assumed that *f*, which appears in three of the

six forms of each paradigm of the past, is a morpheme expressing tense represented by the feature [past], and opposed to its absence in the remaining forms of the past and all forms of the present and imperative. The independence of this segment is implied by that of the segment preceding, which expresses aspect, and by that of *te*, which follows in the second person plural. It is supported by the interaction of *f* with *v*, both of which may still occur in the first person plural (e.g., 1pl. *nosifme/nosivme* in the past aorist of *nos+*). The alternation of *f* with *v* is being eliminated (see 2:3, note 12), but variation in the preceding and following segments has been unaffected, from which we must conclude the independence of *f/v* historically, and that of *f* synchronically.²⁵ Since *f* occurs only in the first person singular and personal forms of the plural (e.g., 1sg.ar. *pišaf*, 1pl.ar. *pišafme*, and 2pl.ar. *pišafte* from *piš+*), the claim that it is a morpheme manifesting a constituent expressing tense (i.e., a category for which all forms of the paradigm are grammatically identical) is not obvious. The meaning of *f* need be compatible only with the forms which exhibit it, and so could be associated with the category of person, which unites the first and second persons, opposing them to the remaining forms of the paradigm. However, the category of tense is also compatible with these forms. We have adopted tense on the basis of the structural identity we have claimed between the past and nonpersonal formations because, in the latter, a category common to all forms of the paradigm is the only possibility for the consonantal string (e.g., *l* in the participle; *n/t* in the adjective), which is not restricted in its occurrence (i.e., occurs throughout the paradigm).

The claim that remaining segments manifest a morpheme representing person and number follows from the universal occurrence of final *a* in the third person plural of the past. In principle, the segments which remain can represent either category or both. The occurrence of final *a* in the third person plural of the contemporary language (e.g., 3pl. *nosia* and 3pl. *nosea* respectively in the past aorist and imperfect of *nos+*), however, argues for both because, historically, it was restricted to the imperfect paradigm; the aorist paradigm attested *e*. Thus, there was a modificational innovation (i.e., elimination of *a/e*) in the segment following *f*. Since the innovation subsumed only the third person plural of the aorist and imperfect — i.e., since it did not subsume all forms of the plural, or all forms expressing third

person — we have adopted the position that *a* of the imperfect was related allomorphically only to the terminal segment of that form, and assigned it the categories of person and number on that basis. Extrapolating, we did the same for other strings following *f*.²⁶

1.2.4 Present and Imperative

1.2.4.1 Desinential Strings

present

string	occurrence ²⁷
VC	1sg., 2sg., 3pl.UX
V	3sg.
VCV	1pl., 2pl.
VVC	3pl.EX

imperative

string	occurrence
V	2sg.UX
VCV	2pl.UX
VC	2sg.EX
VCCV	2pl.EX

1.2.4.2 Claims

1. Initial vowels and *j* are morphemes manifesting a constituent which expresses mode.
2. Remaining segments are morphemes

manifesting a constituent which expresses person and number.

1.2.4.2.1 Claim 1

With regard to the remaining desinence initial vowels, we begin by noting that there are only two possibilities: either they are morphemes which oppose forms within their respective paradigms, or they are morphemes which oppose the paradigms as such. The interpretation that we have adopted, that realizations of the segment in question are morphemes which express a category opposing their respective paradigms as such, follows in part from our analysis of the appearance of new word-level forms in non-personal formations, an innovation which, we have claimed, reflects extension of the category of aspect. If it is true that the basis for paradigmatic unity among the past and nonpersonal formations was, and is, the occurrence of a consonant or consonants unique to each of the relevant paradigms, an attribute of structure *absent* in the present and imperative, we must infer generally that the canonical shape of desinential strings has been relevant in the classification of word-level units. Thus, in effect, the absence of such consonants in the present and imperative not only opposes them to other paradigms, but unites them with respect to each other. In view of this and our finding that formational meaning is represented in vocalic segments which are desinence initial, we have assumed a unity of the present and imperative, represented morphologically in the desinence initial segment, expressing *mode* for which, grammatically, the imperative is marked and the present is unmarked.

The evolution of the system supports this interpretation. There were two imperative patterns among verbs with unextended conjugation, *i* in the singular, *ě* in the plural; and *i* in the singular, *i* in the plural:

Pattern 1; e.g., *pas+*:

	present	imperative
2sg.	-eš	-i
3sg.	-e	
1pl.	-eme	
2pl.	-ete	-ěte

Pattern 2; e.g., *piš+*:

	present	imperative
2sg.	-eš	-i
3sg.	-e	
1pl.	-eme	
2pl.	-ete	-ite

Pattern 3; e.g., *nos+*:

	present	imperative
2sg.	-iš	-i
3sg.	-i	
1pl.	-ime	
2pl.	-ite	-ite

This difference is no longer attested. Verbs with the second and third patterns now attest desinence initial *e* < *ě* in the plural (e.g., 2pl. *pišete* from *piš+*; 2pl. *nosete* from *nos+*). There has obviously been a modificational innovation, but the details of its mechanism are unclear. We could assume that *ě* and *i* of the second person plural were related allomorphically, yielding an alternation *i/ě* which was eliminated in favor of *ě*. Generally, however, such innovation is unattested in Macedonian. Inherited differences in the nonterminal suffix of the present and past aorist, for example, remain very much intact. However, if we assume that desinence initial *ě* of the first pattern was a morpheme signalling the imperative (i.e., with the meaning 'Mo.:iv.'), which is possible because it, unlike *i*, was restricted to the imperative, we can view the innovation in question as extension of *ě* (i.e., as extension of the first pattern), which permits us to understand its telos to have been morphological representation of the markedness of imperative forms with respect to those of

the present. This follows from the fact that, historically, the singular imperative was *consistently* distinct in its segmental composition from the second person singular of the present, but the plural imperative was distinct from the second person plural of the present *only* among verbs with nonterminal *e* in the latter (i.e., desinential *-i* in the singular imperative was segmentally different from *-eš* and *-iš* in the second person singular present, but *-ite* in the plural imperative was segmentally identical to the desinential portion of the second person plural present in some of the verbs attesting it, e.g., *nos+*, which attested *nosite* in present as well as imperative contexts).

With the extension of *ě*, the plural imperative and second person plural present were consistently distinct in segmental composition, and remained so until *ě* was reinterpreted as *e* (see Koneski 1965:43-45). Based on this diachronic analysis, we have assumed the segment in question represents mode, and opposes forms of the imperative to those of the present, which are unspecified modally. Extrapolating, we adopted this analysis for verbs with extended conjugation as well, since they oppose terminal *j* in the imperative to its absence in the present. It should be noted that, with the reinterpretation of *ě* as *e*, the imperative, like the present, was, and has remained, unspecified for modality with respect to its morphological composition in verbs with unextended conjugation.

1.2.4.2.2 Claim 2

We have already concluded that *te* in the past is a constituent representing person and number. We have therefore assumed it has the same value in the present and imperative as well, and, extrapolating, that all strings following initial vowels in these formations express this meaning.

1.3 Alternations²⁸

We have claimed linkage to aspect represented by [aorist] within consonantal subsystems, aspect represented by [imperfective] in aspectual pairs, and mode represented by [imperative] in nonconsonantal subsystems (see 2:6.1.1.2).²⁹ This interpretation takes the extension of existing alternations as its point of departure:

extended exponent	inherited in...	extended to...	yielding...
<i>ǵ</i>	<i>d/ǵ</i> exhibit- ing pattern 2	<i>-pad-</i> in aspectual pairs	<i>d/ǵ</i> following pattern 2 ³⁰
<i>i</i>	<i>Ø/i</i> exhibit- ing pattern 2	aspectual pairs with -CC-	<i>Ø/i</i> following pattern 2 ³¹
<i>g</i>	<i>ž/g</i> exhibit- ing pattern 3	<i>-molz-</i> and ° <i>lez-</i> in un- suffixes stems	<i>z/g</i> following pattern 3
<i>Ø</i>	<i>d/Ø</i> exhibit- ing pattern 4	<i>-klad-/kla-</i> in unsuffixed stems	<i>d/Ø</i> follow- ing pattern 4

Extension permits us to infer that each of the alternations in question is patterned, and to identify its derived exponent, which we assume to be the one newly attested in roots formerly without alternation (e.g., *g* in *z/g*, newly attested in °*lez-/°leg-* and *-molz-/molg-*, which inherited nonalternating *z* in final position).

The evidence for linkage, i.e., the type of patterned distribution in which a derived exponent is not only associated with, but representative of, grammatical properties of the environment, is less obvious. In the case of *d/ǵ* and *Ø/i*, we have inferred linkage simply because there is no apparent phonological attribute with which *ǵ* and *i*, the derived exponents, can be associated. The claim that derived exponents in all but *d/Ø* of the remaining alternations are linked to [+aorist] is based on the extension of aspect to the nonpersonal formations of stems with *-mel-/ml-*. The inherited forms of such stems attested *e* desinence initially (e.g., in the participial singular masculine: *-mlen*), but were nevertheless assigned aorist meaning, apparently as a result of the absence of a vowel in the root, which was characteristic of aorist forms of the past (e.g., 1sg.

mlef, etc.; cf. 1sg. *melef*, etc. of the imperfect, with *e* in the root). New forms with imperfect meaning and desinence initial *e*, but with the overt exponent of *e/∅* in the root, evolved to complement them (e.g., in the participial singular masculine: *-melen*). This innovation confirms linkage to [+aorist] since allomorphic opposition of *-ml-* to *-mel-* was the only attribute available in this root to represent aspectual meaning. In verbs with roots exhibiting other alternations (i.e., *č/k* and *ž/g*), there were desinence initial oppositions as well (e.g., in participial *-plačel* versus *-plakal* from *-plač-/plak-*, where *č/k* was accompanied by desinential *e* versus *a*). Alternations in such roots could therefore be construed as a function of differences in the desinence initial segment (e.g., *č* before *e*, *k* elsewhere in *č/k*). The alternation in *-mel-/ml-* could not be analyzed this way because the root in question was always followed by *e* in aspectual forms. On this basis, we have assumed linkage for all derived exponents restricted to aorist forms, and, more generally, for derived exponents restricted to marked forms; thus, for *∅* of *d/∅*, which is restricted to the imperative.³²

Linkage to [+aorist] is supported by the fate of two alternations which have been eliminated, *š/s* and *ž/z*, the non-palatal exponent of which was historically restricted to forms of the aorist, where it has been replaced by the palatal (e.g., in 1sg. *pišaf*, 2/3sg. *pisa*, etc. the past aorist forms of *piš+*, which, in the contemporary language, are 1sg. *pišaf*, 2/3sg. *piša*, etc.).³³ This distribution appears to contradict the association of derived exponents with [+aorist], and seems all the more puzzling in view of the retention of *č/k* and *ž/g* in verbs with *-plač-/plak-*, *-suč-/suk-*, *-laž-/lag-* and *-struž-/strug-* which were identical in the distribution of exponents to *š/s* and *ž/z* (i.e., one exponent restricted to aorist forms, the other to imperfect). Nevertheless, the difference in fate can be motivated since *k* and *g* (i.e., the derived exponents of *č/k* and *ž/g*) were restricted to forms of the aorist not only among verbs exhibiting *e:o* or *e:a* (i.e., the conjugation type of verbs attesting them), but among *all* verbs with desinence initial *e* predominating in the present. In contrast, *s* and *z* (i.e., the derived exponents of *š/s* and *ž/z*) were not.³⁴ Thus, we need only assume that Macedonian defined *restricted* more broadly, with respect to *both* components of the pattern of conjugation (i.e., present as well as aorist), not just the second. For this reason, *š/s* and *ž/z* were unpatterned, and eliminated.³⁵ But this interpretation is

possible only if we assume linkage. It is only in this circumstance that the restriction on exponents in aorist forms makes sense. If a derived exponent is linked, it functions, in effect, like a grammatical morpheme, i.e., it has grammatical meaning, and is therefore incompatible with forms which express different meaning. Thus, if *k* and *g* are linked to, and therefore express, [+aorist], they cannot occur in forms which, within the domain of restriction, are [-aorist].

2 Paradigmatic Organization

We have assumed that verbal forms and stems are organized into sets, or paradigmatic unities, on the basis of hierarchically related identities in structure, realization, and grammatical meaning. For verbal forms (see 2:2.2), classificatory significance was assigned, in descending order of superiority, to:

1. realization of the stem, yielding *conjugations*;
2. presence versus absence of a recurring string of consonants, yielding *subsystems*;
3. low-level constituent structure, yielding *formations*;
4. the features [imperative] and [aorist], yielding *paradigms*; and
5. the features [plural] and [personal], yielding *subparadigms*;

and for verbal stems (see 2:1.3 and 2:8), to:

1. identity in the semantic content of the root, yielding *families*;
2. the feature [imperfective], yielding *aspectual pairs*;
3. identity in constituent structure with respect to presence versus absence of the suffixal root-qualifier, yielding *types*;
4. (a.) realization of the suffixal root-qualifier, (b.) identity in constituent structure with respect to presence versus absence of the extender, (c.) certain realizations of the segment immediately following the stem, and (d.) low-level constituent structure, yielding *subtypes*.

To support the relevance of these attributes in paradigmatic organization, we must argue that each has defined at least one domain of innovation in the evolution of the verbal system. We turn now to this task.

2.1 Verbal Forms

For verbal forms, paradigmatic relevance of the realization of the stem is easily inferable from incremental innovation which has given rise to new stems (e.g., *crvos+*, *iznesuv+*). The appearance of each new stem has been accompanied by the inventory of word-level forms which constitute the unit we know traditionally as a *conjugation*. We therefore assume that the stem serves as the principal basis for the organization of verbal forms. The internal organization of the conjugational unit (i.e., the units we have termed *subsystems*, *formations*, *paradigms*, and *subparadigms*; see 2:2.2) follows from other innovations we have considered, which include:

1. extension of aspect to nonpersonal formations in verbs with unextended conjugation (see 3:1.2.1 and 3:1.2.2), supporting subsystems and formations;
2. extension of *ě* in the plural imperative of verbs with unextended conjugation (see 3:1.2.4), supporting subsystems, formations, and paradigms;
3. elimination of terminal *a/e* in the third person plural of the past (see 3:1.2.3.2.2.), supporting formations; and
4. elimination of terminal *y/i/a* in the plural of the participle and adjective (see 3:1.2.1.2.2), supporting subparadigms.

The existence of subsystems emerged in our discussion of the extension of aspect, where we noted that the domain of innovation was defined by a recurring string of consonants, implying paradigmatic unity on this basis for the past and nonpersonal formations, and suggesting their opposition to the present and imperative, which lack such a string. More direct evidence for a subsystem comprising the present and imperative was provided by the evolution of the desinence initial segment in the imperative, i.e., the extension of *ě* in the plural imperative, which we claimed had as its telos representation of the markedness of the imperative

with respect to the second person of the present. However, the extension of aspect and of *ě* are of further significance because, in each, the units among which greater similarity evolved (i.e., the units which underwent innovation) were themselves complex (i.e., constituted by more than one word-level form). Thus, the extension of aspect created greater similarity among *aggregates* of forms (i.e., the aggregates defined by recurring *f*, *l*, etc.), attesting, therefore, not only to the existence of subsystems (i.e., the domain of innovation), but to the unities we have termed *formations* as well. The extension of *ě* created greater similarity among aggregates expressing imperative meaning, attesting, therefore, to their existence — i.e., to the existence of units we have termed *formations* — as well as to that of the nonconsonantal subsystem, which was the domain of innovation. The existence of formations is confirmed by the elimination of *a/e* in terminal segments, a change which was restricted to the past. That of subparadigms is implicit in the elimination of allomorphy attested by the terminal segment of nonpersonal formations (i.e., elimination of *i/y/a* in the terminal segment of the participle and adjective).

The hierarchy we have adopted takes as its starting point the unit subsuming the largest number of verbal forms with a given stem (i.e., the conjugational unit), and ends with the smallest (i.e., the subparadigm), with three units (i.e., the subsystem, formation, and paradigm) between in descending order of size. Since this hierarchical organization may seem obvious, we should emphasize that it is not, nor, we should add, is the set of attributes to which we have assigned classificatory significance. With regard to the latter, we simply note that a number of additional attributes are available for the classification of forms (e.g., the number of segments in them, the number of segments in their desinential strings), none of which appears to be relevant. For those which are relevant, several hierarchical organizations are possible in principle. It may well be that, with broader knowledge of the nature of linguistic systems, we would find the attributes for which there is evidence in Macedonian to be those entailed by universals of morphological organization. At this time, however, there are no universals, even tentative, of this sort; we must therefore rely on diachronic evidence, which permits us to infer the hierarchy we have proposed because, as we have noted, the units among which greater similarity evolved were, in some

instances, complex (composed of more than one form), attesting to the existence of paradigms within paradigms as follows:

1. Formations (viz., nonpersonal) underwent innovation within subsystems (viz., consonantal).
2. Paradigms (viz., aspectual) underwent innovation within formations (i.e., past).
3. Subparadigms (viz., quantified) underwent innovation within paradigms (viz., nonpersonal aspectual).

2.2 Verbal Stems

Of the attributes we have claimed to be relevant in the classification of stems, the evolution of *z/g* and *d/ǵ* (see 3:1.3) provides support for the semantic content of the root, its realization, and the structure and realization of desinential strings. As a derived exponent, *g* appeared among stems with unextended conjugation and root-final *z*, provided *o* was desinence initial in the past aorist, and there was no suffixal root-qualifier (i.e., among unsuffixed stems with the root ^o*lez-* or *-molz-*). Generalizing, we infer the relevance of desinential constituent structure from the restriction to verbs with unextended conjugation,³⁶ that of root and desinential realization from the restriction to verbs with root-final *z* as well as desinence initial *o* in the past aorist, and that of the semantic content of the root from the implementation of extension among *all* verbs with ^o*lez-* or with *-molz-*, not just a subset of them. The appearance of *ǵ* as a derived exponent throughout the conjugational unit of an imperfective stem with *-pad-* implies paradigmatic relevance of the bases for the aspectual pair. Remaining to be considered, therefore, are the claims of relevance for:

1. realizations of the suffixal root-qualifier; and
2. dominant realizations of the mode indicator in the present.

2.2.1 Claim 1

Suffixed stems in Macedonian exhibit an exceptionless correlation between pattern of conjugation and realization of the suffixal root-qualifier (e.g., *-ol-* in the qualifier correlates with *ti*, e.g., in *šum-ol+*; *-n-* with *e:a*, e.g., in *pad-n+*), which

is maintained with the addition, through incremental innovation, of new suffixed stems to the lexicon. Assuming the correlation and its maintenance are systemically motivated, we must conclude that the domain of innovation giving rise to the word-level units entailed by the appearance of new suffixed stems is defined not only by constituent structure, but also by realizations of the suffixal root-qualifier, from which we infer their relevance in the classification of these stems. The strings in question are subordinate to low-level constituent structure, part of which (i.e., the suffixal root-qualifier) they manifest, and superordinate to pattern of conjugation, which they entail.

2.2.2 Claim 2

Within formations, there are two general types of distribution in the segment immediately following the stem of verbs with unextended conjugation:

1. patterned, attested in imperative paradigms where the realization is consistently *i/e*, and in imperfect paradigms, where it is consistently *e*;
2. unpatterned variation, with realizations grammatically and/or lexically distributed, attested in the present where *e* and *i* must be specified for verbal stems (e.g., *e* for *greb+*, *i* for *nos+*), and in aorist paradigms, where *a*, *i*, *o*, and the absence of a vowel must also be specified (e.g., *a* for *greb+*, *i* for *nos+*).

We have claimed, in effect, that realizations of the second type are relevant in the classification of verbal stems exhibiting them (i.e., verbs with unextended conjugation), thus establishing the subtypes *e:a*, *i:i*, etc. (see 2:8). We have already supported the relevance of realizations of the aspect indicator in the past aorist by showing that the appearance of *z/g* in *°lez-* and *-molz-* was the result of modificational innovation within domains which must be defined with respect to the realizations in question. Evidence for the relevance of realizations of the mode indicator in the present (i.e., *e* versus *i*) is provided by the pattern of conjugation *l:i//a* (e.g., *bro+*; see 2:7.2.9), which was not inherited, but arose from the replacement of *a* by *i* in the aorist paradigms of verbs that inherited *ta* (e.g., *molč+*). This innovation is apparently in progress (i.e., some verbs attest *i* and *a* in the aorist), and

will be until all such verbs attest *i* exclusively (i.e., until *ta* no longer exists).³⁷ The domain within which *a* is being eliminated is defined, in part at least, by the occurrence of *i* in the present since such verbs are the only ones which attest *i* replacing *a* in the aspect indicator of aorist paradigms (cf. *a* in the aorist of *greb+*, which is not being replaced). We must therefore assign classificatory significance to *i* and, extrapolating, to *e* because it, too, is a realization of the constituent in question among unsuffixed verbs with unextended conjugation.

The ongoing elimination of *a* in the aorist of the verbs in question can be attributed to the productivity of *i:i*. This interpretation, it should be noted, is compatible with the failure of any realization of the aspect indicator to be extended among verbs with *e* dominant in the mode indicator of the present. These verbs attest no realization of the aspect indicator which is productive among unsuffixed stems, although *a* is productive among suffixed since it is entailed by *-n-* (e.g., in *pad-n+*), a productive realization of the suffixal root-qualifier. We have assigned realizations of the aspect indicator to a subordinate position with respect to those of the mode indicator (thus, *ea*, etc.; not *a:e*, etc. in the notation we have adopted) because unpatterned differences in the former have been restricted by realizations of the latter (e.g., elimination of *a* in the aorist among verbs with *i* in the present), but not vice versa. Both realizations are assigned a position subordinate to presence versus absence of the extender on the basis of the evolution of non-personal formations, which evolved in parallel fashion with respect to the extension of aspect among all verbs in which the extender was absent, regardless of realizational peculiarities of the mode and aspect indicators.

2.3 Excursus on the Role of Radical Morphemes in the Paradigmatic Organization of Stems

There is further evidence to suggest that the segmental composition of morphemes is relevant in the classification of stems. In considering the elimination of *a* as a realization of the aspect indicator among verbs with *i* in the present, we failed to note that stems which inherited *i:a* exhibited a restricted set of units in root-final position: *č*, *ž*, or *o*. This peculiarity would be of no concern if *i/a* — the transition from *a* to *i* in the aspect indicator — were attested only among stems which inherited *ta* (e.g., *molč+*). However, it is

also attested among some which inherited *i:/i*, but only those with roots exhibiting final *č*, *ž*, or *o* (e.g., *belež+*, *bro+*). Thus the domain of the innovation in question cannot be defined exclusively with respect to the dominant realization of the mode indicator in the present. This attribute is undoubtedly relevant, but insufficient by itself as a basis for the domain unless we wish to view as a coincidence the appearance of *a* for *i* exclusively among verbs with certain realizations of the root-final segment. If not, we must view the realization of this segment as potentially relevant.

Other data are also significant in this regard. We have noted that the distribution of allomorphs of the morpheme meaning 'As.:ar.' among verbs with unextended conjugation is unpatterned, and that these realizations appear to be significant in the paradigmatic organization of stems. Nevertheless, there is little doubt that some attempt has been made to associate realizations of this morpheme with root-final segments, in which case we must conclude that realizations of the root-final segment are relevant in classification. The evidence is provided by two contemporary patterns of conjugation, *i:/o* and *i:/i/o*, neither of which was inherited. Each is probably the result of a modification in which differences in conjugation type were eliminated. At least three verbs were affected: *iz-brič+*, *do-sed+*, and *s-vrt+*, all of which should attest *i:/i* and no alternation. In this regard it is noteworthy that *do-sed+* and *s-vrt+* exhibit a dental in root-final position and that, among verbs with *e* in the present, all stems with root-final dental (e.g., *met+*, *gnet+*) exhibit *o* in the past aorist. It therefore appears likely that *o* has replaced *i* within a domain based not only on stem structure (i.e., unsuffixed status), but also on the realization of root-final segments. This interpretation is compatible with the evolution of *iz-brič+*, which apparently was likened to verbs with unsuffixed stems and *č* in root-final position (e.g., verbs with *-reč-/rek-*). However, such verbs attest *a* in the aspect indicator of the past aorist as well as *o* (e.g., in verbs with *-laž-/lag-*, which attest *a*; cf. those with *-reč-/rek-*, which attest *o*). It may be significant in this regard that, of stems with roots exhibiting *č/k* or *ž/g*, *a* versus *o* in the past aorist correlates with root vocalisms: *a* occurs in the past aorist of verbs with *-struž-/strug-* and *-laž-/lag-*; *o* in that of other verbs (e.g., *-striž-/strig-*, *-reč-/rek-*). Thus, *a* correlates with *a* and *u* in the root vocalism, and *o* with other vowels. If the extension of *a* to

stems with *-služ-* yielding *-služ-/slug-* and *o* to those with *-brič-* yielding *-brič-/brik-* is not a coincidence, it can be taken as evidence that root vocalisms were relevant in evolution, and therefore relevant in the classification of stems.

2.4 Excursus on the Paradigmatic Organization Proposed in Previous Studies

Previous studies have been concerned only with the classification of *stems*, and then, only in the context of the problem of "predicting" pattern of conjugation (i.e., the realization of the disputed segment in the present and aorist, where it is not uniform) from stem structure and/or realization. Not surprisingly, this concern is especially apparent in Lunt's analysis, which is implemented in the spirit of Jakobson's work on Russian, in which the ability to predict pattern of conjugation from stem structure is the primary concern. The general procedure in analyses of Macedonian, although unstated, has been to assign classificatory status to those attributes of stems from which other attributes, or a maximum of others, as well as any peculiarities of desinential strings (i.e., the pattern of conjugation) can be determined. The details of classification, accordingly, reflect the structure proposed for stems, which, we have noted, was probably influenced by uncertainty with respect to the contribution of what we have termed the *disputed segment* (i.e., the segment immediately following the suffixal root-qualifier; see 3:1.1.2), and the assumption that there should be a well-defined correlation between stem structure and pattern of conjugation.

In Lunt 1952, the stem includes the disputed segment, and is classified in terms of its realization in the third person singular of the present. Since there is no other attribute to which classificatory significance is assigned, the result is three stem types:

1. those with final *e*; e.g., *greb-e+*, *pad-n-e+*;
2. those with final *i*; e.g., *nos-i+*, *šum-ol-i+*; and
3. those with final *a*; e.g., *gled-a+*, *pad-n-uv-a+*.

There are no differences in pattern of conjugation among the types because desinential morphemes within this analysis include only those which express person and number.

There are only differences in the pattern of realization of the stem-final segment, which is termed the *stem vowel*. The question, then, is to what extent the entire realization of this segment is entailed by its realization in the third person singular of the present. Verbs with extended conjugation present no problem in this regard since the realization of the stem vowel is *a*, except in the first person singular present where, within the framework adopted by Lunt, it is absent. Other verbs pose a problem only in the forms of aorist paradigms, where realizations of the disputed segment do not correlate in a well-defined fashion, and are therefore not entailed by its realization in the citation form. Lunt (1952:74) notes that, among stems with *e* in the disputed segment and without a suffixal root-qualifier (e.g., *greb-e+*), those with final *i* or *u* (i.e., stems with roots like *-bi-* or *-ču-*) consistently exhibit zero in the stem-vowel of the past aorist. Among the remaining realizations of aorist stem vowels, he assigns *regular* status to the most frequently occurring, which include *a* for verbs with *e* in the citation form (e.g., *piš-e+*) and *i* for those with *i* (e.g., *nos-i+*). Verbs which do not conform to one of the norms are *irregular*.

Koneski 1967 and Usikova 1967 adopt the third person singular present as the citation form of the verb but neither assigns the disputed segment to the stem in this form. This is generally true of Koneski (i.e., Koneski assigns the disputed segment to desinential strings in all formations), with the result that there is no correlation between stem structure and pattern of conjugation. The pattern of each verb must be specified in the manner we have adopted because there is no attribute of the stem, in unsuffixed verbs at least, from which it is unambiguously predictable. In effect, the specification of each verb is its classification, as we have claimed. Usikova's stem structure, in contrast, includes aorist realizations of the disputed segment. Her stem classification, therefore, must specify pattern of conjugation in the present component only. The aorist component is predictable from stem structure. Both Koneski and Usikova appear to classify in terms of the stem-final segment and, in verbs with root alternation, the exponent which occurs in the present. This analysis probably reflects their recognition of some correlation between root-final segments and the realization of the disputed segment. Although there is no comment in this regard, it can be inferred from the exposition in Koneski 1967, where realizations of the disputed

segment are subcategorized by those of the root-final. Since realizations of the disputed segment in the past aorist have classificatory significance, irregularities within the frameworks proposed by Usikova and Koneski are few compared with the number in Lunt. The relative paucity of irregular verbs results not only from the classificatory role of the disputed segment in the past aorist, but also from the treatment of allomorphy in the root, which is considered a *peculiarity*, presumably because it is relatively rare, not an *irregularity*.

Notes

¹The discussion of each formation and of the verbal stem begins with a summary of the constituent structure we have proposed for it, and of the claims relevant to it which are implicit in the description we have offered. Each claim is considered individually unless it or the evidence for it is relevant to the discussion of another.

All historical analyses in this chapter are my own. For traditional discussion of the evolution of the verbal system, see Koneski 1965:142-168. With regard to history, we note that the standard language of Macedonia was created by a commission established for this purpose in 1944 (see Lunt 1952:5-7 and Koneski 1967:53-75). Geographically, the basis of standard Macedonian is the relatively homogeneous group of dialects west of the Vardar River within the region defined by Prilep, Bitola, Kičevo, and Veles. Thus, CSM has not evolved in the strict sense of the word. Nevertheless, we may still legitimately speak of the evolution of the system because there is no reason to think that, in making its decisions vis-à-vis differences among the dialects in question, the commission went beyond relatively unimportant features from the structural point of view (i.e., features which were relevant to individual forms, not subsystems thereof; thus, for example, the choice of terminal *m* in the first person singular present of *all* verbs). The essential systemic nature of the dialectal base, we may assume, remains intact.

²For purposes of defining the segmental extent of the stem constituent, we take the third person singular present as a point of reference. In principle, any word-level form would do. The third person singular present was chosen because it is the usual citation form of the verb.

³Macedonian nouns generally have four forms: *singular indefinite*, *singular definite*, *plural indefinite*, and *plural definite*. Traditionally, and in this study, they are cited in the singular indefinite. For discussion of Macedonian nominal morphology, see Lunt 1952:27-34.

There will be no attempt in this study to demonstrate that forms claimed to be new with respect to the contemporary corpus are in fact new. In this regard, however, it should be noted that the forms we cite are new morphologically (i.e., they attest combinations of strings and/or constituents not formerly attested) as well as lexically, and so easily recognizable as the result of innovation.

⁴The stem is the only upper-level constituent of verbal forms recognized in previous studies and considered in this one. However, it may not be the only one which exists. Two observations are relevant in this regard:

1. Although verbal stems include grammatical morphemes which modify events nonrelationally (i.e., morphemes expres-

sing aspect), all such morphemes need *not* be part of the verbal stem. In Macedonian, for example, the aspect indicator is not a constituent of stems, an interpretation which is supported by the absence of this unit in deverbal formations of the type we have cited. Whether the occurrence of such morphemes requires the recognition of an upper-level unit which might be termed *sub-stem* remains to be investigated. There is no obvious historical, or other, evidence for the existence of such a unit in Macedonian. We should also mention the possibility that each successive constituent following the stem defines an additional upper-level unit regardless of its contribution to meaning.

2. The categories *status*, *resultativity*, and *taxis* create a *derived* stem; i.e., a nonverbal stem which has as its head a verbal stem. Generally, such stems are not units of lexicon, and may therefore be termed *secondary*, in contrast to the verbal stem, which is *primary*. Secondary stems have the potential to become primary (i.e., to become units of lexicon) and, in certain cases, have (e.g., *bidejki* 'because', historically, the adverb of 'be', but synchronically an adverb in its own right, not exhibiting a verbal stem, but continuing to exhibit a verbal root). The derived stem of the verbal noun has probably been the most vulnerable to this sort of reinterpretation.

⁵New stems also confirm the segmental extent we have proposed for the verbal stem.

⁶Although the existence of these positions is clear, the boundaries which define them may not be in certain instances. We have noted (see 2:1.1, note 2), for example, that the boundary between root and suffixal qualifier in the case of *-as/-os/-es/-is/-jos-* is uncertain, perhaps for the native speaker as well as the linguist.

⁷We have noted (see 2:1.1, note 2) that qualifiers may be complex, i.e., manifested by a sequence of morphemes. There is no reason to think at present that such sequences (e.g., *-n-uv-*, *po-u-*) represent two constituents, but, with further analysis of the strings in question, it may prove necessary to adopt this interpretation.

⁸The excursions present analyses available in previous studies, or analyses for which there is historical evidence of a somewhat more tentative nature than the evidence supporting other analyses adopted in this study. They follow the sections to which they are related in content, but can be omitted with no loss of continuity, and read subsequently as appendices.

⁹In Usikova 1967, this constituent is the *thematic vowel*; in Lunt 1952, it is the *stem vowel*.

¹⁰Within this framework, verbs with extended conjugation have two realizations of the stem: CV(C)+ and CV(C)-a+ (e.g., *gled+ / gled-a+*). Verbs with unextended have at least three since there is no such verb

with fewer than two realizations of the stem vowel. Some exhibit root allomorphy in addition (e.g., *reč*+/*reč-e*+/*rek-o*+).

¹¹Lunt (1951) seems to claim that his analysis of the verbal stem preceded the concern for a new citation form:

Eden praktičen zaključok može da se izvleče od ovaa analiza: deka "imeto" na glagolot, formata što bi se odbeležovala vo reč-nikot, treba da bide onaa forma od koja možat da se izvedat site drugi, to est formata za treto lice ednina segašno vreme. Upotrebata na prvoto lice ednina se bazira na tradicijata vo bugarskata i grčkata gramatika. Meğutoa vo makedonskiot jazik taa forma e zapravo takva što pokažuva najmnogu dvojbenosti: treba sekogaš da se pridavaat nekoj drugi podatoci: *zemam* može da bide od *zema* ili *zeme*, *frlam* od *frla* ili *frlil*. No za rečnikot e dovolno da se dade primarnata forma i vidot. So ovie podatoci site drugi formi se prevideni. Samo za relativno mal broj glagoli (dokaj osum deset koreni) se potrebni poveќе podatoci.

translation: One practical conclusion can be drawn from this analysis: that the citation form of the verb, the form found in the dictionary, must be that from which all of the others can be derived, i.e., the third person singular of the present. The use of the first person singular of the present is based on the tradition in Bulgarian and Greek grammars. But in Macedonian, this form is the one which exhibits the most ambiguity; the one which requires other information: *zemam*, for example, can be from *zema* or *zeme*, *frlam* can be from *frla* or *frlil*. But, for the dictionary, it is enough to give the third person singular of the present and the aspect of the verb. From this information, all of the other forms can be determined. Only a relatively small number of verbs (about eighty stems) require more information.

Nevertheless, his identification of the verbal stem with the third person singular present *despite* his Jakobsonian orientation and knowledge that the disputed vowel as it occurs in the present is not assigned to the verbal stem within the approach promulgated by Jakobson (1984:12-26) for Russian suggests that practical considerations were relevant, especially since selection of the third person singular past aorist would have provided a more informative stem. We must conclude that the selection of a present form reflected the Macedonian practice of using such a form to cite the verb.

¹²Lunt's analysis was first chronologically, and so contains no comment on the other two. Koneski (1967:410) mentions, but does not comment on Lunt's. We assume that he would object to it for the same reason he objects to Usikova's since, structurally, it is identical to Usikova's with respect to the number of positions in the stem. On Lunt's analysis, Usikova (1967:53-54) offers this brief comment:

V grammatikax makedonskogo literaturnogo jazyka prinjata klassifikacija, postroennaja na odnoj isxodnoj osnove — obščej glagol'noj osnove ("opšt glagolski del") i vperve predložennaja X. Lantom. Klassifikacija Lanta otičetsja logičnost'ju i strojnost'ju, no, na naš vzgljad, v nej sliškom mnogo glagolov popadaet v čislo isključenij, čto delaet klassifikaciju maloudobnoj. Krome togo, ona ne prigodna dlja opisanija glagol'nyx form v raznyx dialektax.

translation: In grammars of the Macedonian literary language, we find a classification on the basis of one stem — the basic stem, first suggested by H. Lunt. Lunt's classification is logical and elegant, but, in our opinion, it entails too many exceptions, which makes it less than optimal. Furthermore, it is not suitable for the description of dialectal systems.

But Usikova's comments on Lunt's analysis, like Koneski's comments on Usikova's, are unsupported. Usikova's opinion that Lunt's stem structure entails too many exceptions is not a basis for the acceptance or rejection of his proposals. And the suitability of any system of generalizations based on one corpus for the description of another is never a relevant consideration. Lunt's stem structure was not established on the basis of dialectal data; hence, there is no reason for it to accommodate such data.

¹³For convenience the slots are labeled with the names of the constituents they exhibit although we have not yet established the constituents.

¹⁴Note the difference between *slot*, which refers to the *absolute* location of strings in relation to their distance from the stem (e.g., *first slot* refers to strings immediately following the stem, *second slot* to strings one slot removed from the stem), and *position*, which refers to their *relative* position (i.e., their position vis-à-vis other desinential constituents; e.g., *second position* refers to strings which immediately follow E [i.e., the extender], and therefore includes M [i.e., the mode indicator] although M occupies the first desinential slot of verbs with unextended conjugation). If we did not distinguish between *slot* and *position*, we would be unable to unite functionally and realizationally identical constituents of verbs regardless of conjugation type since the constituents of verbs with extended conjugation are one slot further removed from the stem than those of verbs with unextended, reflecting the occurrence in the former of the extender.

¹⁵Throughout the discussion, claims relating to initial vowels are made exclusively with respect to verbs exhibiting *unextended* conjugation since we have already determined that initial *a* of verbs with extended is independent, with the meaning 'Af.:vb.'

¹⁶Realizational differences in the segments following the stem may be accompanied by differences in the root, reflecting *č/k* and other alternations. The status of these alternations is considered later (see 3:1.3). Note, too, that in citing forms, we ignore realizational peculiarities of the root which have been eliminated (e.g., *š/s* in the root of *piš+*; thus, *pišal*, etc. in the participle of this verb, not *pisal*, etc.).

In stems with the root *-mel-/ -ml-*, and only in such stems, aorist and imperfect forms all attest *e* following the stem, but are distinguished by *e/Ø* in the root, with aorist forms attesting the zero exponent and imperfect forms the overt one (e.g., in the participial singular masculine, where *-mlen* is attested in the aorist, and *-melen* in the imperfect). The imperfect forms are new.

¹⁷Occasionally, unpaired adjectival forms with *a* are attested (e.g., in *pišan*, etc., the adjectival forms of *piš+*). All such forms were inherited, and are assumed to be aorist. We return to them shortly.

¹⁸The only exception were stems with *-mel-/ -ml-*, which had initial *e*, but nevertheless evolved new forms, also with initial *e*, because the inherited forms exhibited an allomorph of the root (i.e., *-ml-*) associated with aorist meaning. The new forms have the other allomorph (i.e., *-mel-*).

¹⁹For example, Lunt 1952 makes no mention of intraconjugational aspect in its survey of the morphology of the verbal adjective. A section on irregularities mentions that some adjectives have both an aorist and an imperfect paradigm which, in the terminology established by Lunt, are called *terminative* and *interminative* respectively. Koneski 1967 and Usikova 1967 do not consider aspect in the verbal adjective an *irregularity*, but a *peculiarity*. The implication is that unopposed adjectival forms do not express this category.

In view of the great difference in meaning and function between the participle and adjective, it should be noted that Koneski (1967:435) assures us the opposition expressed by each is the same, and properly interpreted as *aorist* versus *imperfect* among unprefixated verbs:

Kaj neprefiksiranite glagoli vo odnosot *bran-beren*, *sean-seen*, se čuvstvuva onaa razlika vo opfakañeto na dejstvoto što ja imame i vo formite *bral-berel*, *seal-seel*, a što se opira na razlikata meѓu minatoto svršeno i nesvršeno vreme: *brav-berev*, *seav-seev*.

translation: Among unprefixated verbs, in relationships like *bran-beren*, *sean-seen* we feel the same difference in the viewing of the action that we find in relationships like *bral-berel*, *seal-seel*, which is based on the difference aorist versus imperfect: *brav-berev*, *seav-seev*.

Among prefixed verbs, however, Koneski is less clear. Having noted that two sets of adjectival forms are attested among verbs with *i:/a* and *e:a*, and cited *brojan-broen*, *krojan-kroen*, *pean-peen*, *sean-seen* as well as prefixed *začmajan-začmaen* as examples, he states:

I ovde vo literaturniot jazik treba da go smetame kaj prefiksiranite glagoli obični formite so osnoven vokal *a*, no kako edinstveno možni glavno za tipot: *ispean*, *nasmear*, *posean*, i sl. Kaj drugite stanuva veќе takvo vkrstuvanje na dvete formi, što ne bi trebalo da ja smetame za pogrešna i upotrebata: *izbroen*, *skroen*, *zgoen* i sl. pogotovo što ovde imame opiraње i na formite kako *izdvoen*, *usvoen*...

translation: In the literary language, we must consider forms with the vowel *a* as usual among prefixed verbs, but as the only ones (i.e., forms) possible primarily for the type *ispean*, *nasmear*, *posean*, etc. For others, a confusion has already arisen between the two forms which does not require us to view as wrong (i.e., permits us to view as acceptable, MJE) the usage *izbroen*, *iskroen*, *zgoen*, etc., which are based on forms like *izdvoen* and *usvoen*...

There appear to be several claims:

1. Prefixed verbs *do* attest two sets of forms in the adjective.
2. Forms with *a* are more frequent (i.e., they are usual).
3. Some verbs attest only forms with *a*.
4. There is confusion between desinence initial *a* and *e* in some verbs.

However, no comment is offered on aspect. In view of this, it should be noted that Tošev 1970 includes a number of prefixed verbs with two sets of adjectival forms, and leaves virtually no doubt that he is assigning one set aorist meaning and the other imperfect. We can infer this because he does *not* use the notation he has established for *alternatives*, which is *X i Y* (translation: *X and Y*). This interpretation is supported by his citation of certain verbs with *i:/a* (e.g., *belež+*), in which the adjectival forms *are* cited as alternatives (e.g., in the case of *belež+*: *beležan i beležen*), but only in the list of aorist forms. In the list of imperfect, the adjectival representative with initial *e* is repeated. This is precisely the format expected from the analysis we have proposed. Since adjectival forms with initial *e* are imperfect, they are unmarked, and may appear in aorist contexts. But aorist forms are marked, and so may not appear in imperfect contexts. The alternative status of forms with *e* and *a* probably reflects the evolution of *i:/a*, which is the result of a tendency.

apparently ongoing, for verbs with *t:a* to take on the characteristics of verbs with *t:l*. We will consider this innovation in greater detail below (see 3:2.2.2).

Perhaps the most important observation to be made regarding Koneski's statement is that it is not incompatible with the existence of aspect in adjectival forms among prefixed verbs if *prefixed* is being used as a synonym for *perfective*. In this context, his difficulty with opposed adjectival forms (i.e., those attesting *e* and *a* where one is *not* an alternative of the other) may reflect the fact that imperfect forms of perfective verbs occur only in nonindicative contexts (see Friedman 1977:191 et passim), which makes the occurrence of such forms in the adjective a function of the extent to which this formation is used modally. To the extent it is not, which remains a topic for investigation, imperfect forms are unlikely for perfective verbs. In this regard, we note that Tošev 1970 cites some verbs which attest unpaired aorist forms in the adjective (e.g., *kaž+*, *piš+*). Such verbs are perfective, suggesting, perhaps, that the evolution of imperfect forms among them has been slower or less widespread than among imperfective verbs.

²⁰The origin of contemporary *e* is uncertain, and consideration of it is beyond the scope of this study (see Koneski 1965:156). Nevertheless, the point remains that inherited *t*, *y*, and *a* have been replaced by a single realization, which implies identity in meaning, i.e., allomorphy, among them.

²¹For the inherited distribution, see Lunt 1974:94-95.

²²There are a very few verbs with two sets of forms in the noun according to Tošev 1970 (e.g., *brañe-bereñe*). Koneski (1967) does not comment on them except to note that they are made exclusively from imperfective verbs via the addition of *-ñe* to the stem followed by the same vowel which appears in the adjective. He may be implying that, if the adjective attests aorist versus imperfect, the noun does as well. In any case, the implication of an aspectual distinction in Tošev 1970 is clear because the pairs in question are not listed as alternatives. The partners with *e* are included among imperfect forms, and those with *a* among aorist.

²³This is not to imply that all forms which were verbal nouns etymologically have remained part of the conjugational unit. Some have left it, remaining nouns, but imparting the event in some manner atypical for nouns still part of the conjugational unit, which, we assume, consistently impart the event in progress.

²⁴(V) denotes $\emptyset$ in desinential strings of the aorist in verbs with *e: $\emptyset$ (e.g., *bl+*).*

²⁵The failure of *f* to replace *š* in the second and third person singular forms of the past imperfect is the basis for our assumption that *š* belongs to the constituent following *f*.

²⁶The only problem in the interpretation of strings following *f* arises with respect to *me* and *te* occurring, respectively, in the first and second persons of the plural. Historically, the string of the first person plural was *m*, which suggests that {C + e}, inherited in the second person plural, was extended to it, yielding *me*. This innovation can be taken as evidence of a boundary between C and V in *me* and *te*, in which case the possibility arises for the assignment of grammatical meaning to *e*.

²⁷Superscript UX or EX indicates restriction in pattern of conjugation. Thus, for example, VC occurs in the third person plural of the present, but only of verbs with unextended conjugation.

²⁸No attention is given to the grammatical properties of alternations in previous studies. The exponent occurring in the citation form of the verb (i.e., the third person singular present) is assumed to have underlying status.

²⁹The evidence for linkage to [imperfective] is the basis for our claim that, in the aspectual opposition *perfective* versus *imperfective*, imperfective is marked (see 2:1.2, note 4).

³⁰The result was *paġ+*, which is considered the aspectual partner of *pad-n+*.

³¹The result is attested in suffixed verbs with *-n-* (e.g., *smet-n+*), which may attest imperfective partners with *-tn-* (e.g., *smet-tn+*).

³²However, we cannot be as certain with *d/∅* since we have assumed that *t* and *d* are eliminated preceding *l*. We could claim they are impermissible, and therefore eliminated, before *any* consonant.

³³The nonpalatal exponent of *š/s* and *ž/z* occurred in all aorist forms, i.e., those of nonpersonal formations as well as those of the past. Roots which attested these alternations and which occur in the contemporary language are: *-piš-*, *-paš-*, *-briš-*, *-rež-*, *-liž-*, *-niž-*, *-kaž-*, and *-rž-*.

³⁴That is, with respect to the *entire* set of verbs with *e* predominating in the present, *k* and *g* occurred only in aorist forms, but *s* and *z* were found in nonaorist as well; e.g., in verbs with *-nes-*, where *s* was found in all forms.

³⁵The assumption implicit in this interpretation is that unpatterned alternations are vulnerable to elimination.

³⁶The relevance of *extended* versus *unextended* is also supported by the extension of aspect to nonpersonal formations, which was restricted to verbs with unextended conjugation.

³⁷Some of the verbs in question still attest *l:a*, and fluctuation is attested even for verbs with the same root.

CHAPTER 4

CONCLUDING REMARKS

With regard to a number of issues, paradigmatic as well as syntagmatic, the analysis offered in this study is similar to those of the handbooks. Paradigmatically, the similarity is classificatory significance for what may be termed *formational* meaning, i.e., meaning which, in Jakobsonian terms, defines the event, usually without reference to its participants, and yields the paradigmatic entities traditionally labeled *present*, *past*, etc. Syntagmatically, it is the representation in terminal morphemes of categories relating to participants of the narrated event (i.e., person, number, and gender), but in nonterminal of the remaining verbal categories (e.g., tense, mode) to the extent they are assumed to be represented at all in other descriptions. Since the handbooks generally go no further, the conclusions of this study are, in effect, compatible with theirs (i.e., do not contradict them), and, by implication, confirm the role of recurrence in syntagmatic organization as well as that of formational meaning in paradigmatic, on which they are based. However, this study goes beyond those which have preceded with several heretofore unmade claims, the most important of which are:

syntagmatically:

1. The vowel immediately following the lexical morpheme of word-level forms is not uniform morphologically. If *a* and in a verb with extended conjugation (e.g., *gled+*), it represents the category of affiliation, imparting the information that a verbal stem precedes. Otherwise, it represents the category of mode in forms traditionally labeled present and imperative, but aspect in other formations.

paradigmatically:

2. Word-level units are classified not only on the basis of formational meaning, but also on that of the presence versus absence of a recurring string. The result is one paradigmatic unit subsuming the past and nonpersonal formations, and another subsuming the present and imperative.

3. Stem-level units are also classified; inherent attributes (i.e., attributes of stem-level constituent structure and the realization of stem-level constituents) as well as those of desinential strings (i.e., the initial segment among verbs with unextended conjugation) are relevant.

morphophonemically:

4. All synchronic allomorphy within the conjugational unit supports the aspectual opposition [+/-aorist].

Two observations are of interest:

1. We have assigned meaning to segments which have heretofore been treated as independent units but *not* associated with grammatical content.

2. We have established [aorist] as the feature representing aspect, and therefore assigned marked status to the aorist in the opposition aorist versus imperfect although there is evidence to suggest marked status for the imperfect.¹

Thus, this study suggests, in the first instance, a need for greater understanding of the bases for paradigmatic organization, and, in the second, the ability of form to be assigned meaning independently of usage.

With regard to the first, our assignment of meaning to the segment immediately following lexical morphemes was a consequence of decisions we made about the organization of the conjugational unit, which resulted in one paradigmatic entity subsuming the past and nonpersonal formations opposed to another subsuming the present and imperative. We have therefore recognized organization beyond that of formational meaning. Previous analyses, which have not gone beyond such meaning as a basis for paradigmatic organization, have left the segment in question unanalyzed because there was no intraconjugational framework within which to compare and evaluate the grammatical potential of its realizations. Thus, considering the conjugational unit as a whole, they have concluded that realizations of the segment in question do not correlate, in any well-defined sense, with grammatical meaning. They could not have concluded

otherwise in a principled way. Consider, for example, the personal forms of a verb like *nos+*:

	pr.	iv.	ip.	ar.
1sg	<i>nosam</i>		<i>nosef</i>	<i>nosif</i>
2sg.	<i>nosiš</i>	<i>nosi</i>	<i>noseše</i>	<i>nosi</i>
3sg.	<i>nosi</i>		<i>noseše</i>	<i>nosi</i>
1pl.	<i>nosime</i>		<i>nosefme</i>	<i>nosifme</i>
2pl.	<i>nosite</i>	<i>nosete</i>	<i>nosefte</i>	<i>nosifte</i>
3pl.	<i>nosat</i>		<i>nosea</i>	<i>nosia</i>

With no organization other than that imposed by formational meaning, we are technically not at liberty to compare *i* in the aorist with *e* in the imperfect, or *e* in the imperative with *i* in the present because each paradigm is an entity unto itself. Since *e* occurs throughout the imperfect and *i* throughout the aorist, neither vowel has grammatical potential within this framework. Yet the extension of *e* to nonpersonal formations (e.g., *nosef*, which joined *nosif* in the participle of *nos+*) leaves no doubt that *i* is evaluated with respect to *e* by native speakers. The desinence initial segment in the present and imperative does vary in realization, and may therefore be assigned meaning although it typically has not been. However, such meaning necessarily relates to the categories of person and number (i.e., the categories which distinguish word-level units within traditional paradigms), and so ignores the fact that, historically, the source of imperative *e* was *ě*, a segment unique to the imperative among nonpast formations, and for that reason available to oppose it to the present (i.e., to express mode). This analysis, we have claimed, explains the extension of *ě* to the imperative of verbs which inherited *i/i* (e.g., *nos+*). Thus, only when the organizational significance of recurring consonants versus their absence is recognized, and with it the paradigmatic relationship of the past to nonpersonal formations as well as the relationship of present to imperative, does the association of certain desinence initial vowels with aspect and others with mode emerge.² Consequently, our consideration of Macedonian provides evidence that the notion of paradigm, in verbal systems typical of the Indo-European languages at least, should be broadened to include entities based not only on formational meaning, but,

potentially, on any attribute — grammatical or formal — common to a subset of word-level units.³

With regard to the assignment of meaning to form, we have assumed an analysis which appears to yield an unacceptable result if it is true, as some claim on the basis of usage, that, aspectually, the imperfect is marked with respect to the aorist. The finding that meaning may be assigned which appears to contradict the evidence of usage is not merely an extension of established assumptions, as is the finding that attributes other than formational meaning may be relevant in paradigmatic organization, but a significant departure from them. It has been customary in morphological analysis to assume that form reflects meaning — that there is a system of grammatical meaning which exists independently of form, but is represented by it. This can be called *functional* meaning, and is typically determined by *usage*. Analysis of this meaning may, and normally does, proceed without attention to the division and classification of forms (i.e., without attention to morphological concerns), and is without doubt a prerequisite to these procedures in the process of acquisition. Jakobson's grammatical studies (1984), for example, reveal many instances of this approach, making frequent reference to categories and/or features the existence of which is supported with the citation of word-level forms *in context*.⁴ In morphological studies like ours, which adopt a Jakobsonian framework for the discussion of such meaning, it is usual to undertake the assignment of meaning to form with reference to functional meaning, the implicit assumption being that no other meaning is represented and, perhaps, that no other meaning exists. This methodology, however, limits the analysis of form, the distribution or occurrence of which, even with due regard to paradigmatic organization, need not be compatible with functional meaning. What is the fate of such form? It could remain unused. Our analysis of aspect in Macedonian, however, suggests that it need not remain unused provided its distribution is compatible with some feature representing a category expressed by the forms in question. To clarify this point, let us return to aspect in Macedonian.

Distributionally, the facts relating to aspectual formations in the Macedonian conjugational unit are simple. The evidence of usage is that imperfect is marked with respect to aorist. Formally, however, this interpretation cannot be incorporated. In verbs with extended conjugation (e.g.,

gled+), there is simply no segment with realizations which accommodate it or any other interpretation of aspect; i.e., there is no desinential segment or string of segments *restricted* to one of the aspects. Accordingly, we have assumed that aspect is morphologically unrepresented in such verbs. This interpretation is compatible with marked status for the imperfect, and requires no further comment than the observation that the expression of functional meaning by word-level forms does not require the representation of such meaning in them. In verbs with unextended conjugation (e.g., *pas+*, *piš+*, *nos+*), however, there *is* a segment — the desinence initial one — meeting the requirement for representation of aspect (i.e., having more than a single realization), but the distribution of realizations in it does not accommodate markedness for the imperfect because the string uniformly characteristic of imperfect forms, i.e., *e* (e.g., 1sg. *pasef*, etc. in the past imperfect of *pas+*; *pasel*, etc. in the participial imperfect of *pas+*; 1sg. *pišef*, etc. in the past imperfect of *piš+*; *pišel*, etc. in the participial imperfect of *piš+*; 1sg. *nosef* in the past imperfect of *nos+*; *nosel*, etc. in the participial imperfect of *nos+*), also occurs in aorist forms (i.e., is not restricted to forms of the imperfect; e.g., 2/3sg. *pase* with *e* in the past aorist of *pas+*). Morphologically, there are two possibilities for the segment in question: 1. it is unused (i.e., assigned no meaning), or 2. it is assigned the category of aspect represented by the feature [aorist], with which it is compatible because there *are* realizations of it restricted to aorist forms (e.g., *o*, *a*, etc.). Extension of the aspectual opposition to nonpersonal formations demonstrates beyond doubt that the segment *is* used, and, by implication, that the aorist is marked since, we have noted, nonpersonal forms with an aorist realization (i.e., *o*, *a*, etc.) evolved aspectual partners with imperfect meaning, but forms with the imperfect realization (i.e., *e*) did not evolve partners with aorist meaning. Macedonian, therefore, appears to demonstrate that the assignment of meaning to form (i.e., the use of form) is more important than accommodation of the functional hierarchy. (i.e., the hierarchy of grammatical meaning which reflects usage); so important, in fact, that meaning can be assigned even if it appears to be incompatible with that which derives from usage.

The result in Macedonian is two hierarchies of grammatical meaning, a *functional* one with aspect represented

by [imperfect], and a *formal* one with aspect represented by [aorist]. Intuitively, one might expect this to mean aspectual equipollence, entailing incompatibility of the imperfect with aorist contexts, and vice versa. Yet, Friedman (1977:190) and others argue that the imperfect can occur in aorist contexts, and on this basis as well as that of facts associated with its evolution, claim the aorist is unmarked. If we wish to avoid a contradiction in terms, we are forced to conclude that morphological marking does not preclude the occurrence of forms in functionally marked contexts. In fact, this is not an unreasonable position. Despite the intimate relationship between form and meaning which constitutes the basis of natural language, form is not a *realization* of meaning, which is to say it is *not*, in and of itself, semantic in nature. In a relationship of realization, we may reasonably assume that properties of the realized unit are relevant to the unit realizing it. Consider, for example, the relationship between phonemes and their allophones. If a language imposes restrictions on the occurrence of phonemes (e.g., restriction of the opposition *voiced* versus *voiceless* to prevocalic position in Slavic languages), we can be certain these restrictions will be reflected realizationally because the unit realized (i.e., the phoneme) is, essentially, of the same nature as the unit realizing it (i.e., the allophone). The same is true of morphemes and allomorphs. But it need not be true of morphemes and meaning, where one component of the association (i.e., morpheme) *represents* the other, but does not *realize* it. Accordingly, there is no systemic reason for form to be bound by constraints on functional meaning.

The inclination to assume that form is bound in this regard undoubtedly originates in the fact that there frequently is accommodation (i.e., form frequently does represent functional meaning), probably to the extent paradigmatic organization permits it. And this is surely a consequence of the iconic tendency of language, in its communicative role at least. However, should accommodation of functional meaning by form be impossible, form may apparently proceed on its own, as it seems to have done in Macedonian, to define a second hierarchy of grammatical meaning, i.e., a hierarchy of *formal* meaning, which is independent of functional. There is no contradiction in terms, and no interference. Functional markedness is relevant for the occurrence of word-level units (i.e., forms which are minimal units of syntax); formal markedness is

relevant for morpheme-level units. Thus, for a category A, forms may be functionally marked and formally marked, functionally marked and formally unmarked, functionally unmarked and formally marked, or unmarked in both respects.⁵

To the extent marked status for the imperfect can be justified, therefore, our consideration of Macedonian verbal morphology has suggested that the relationship between form and meaning is more complex than previously thought, and that functional meaning, although undoubtedly primary in the sense that, under optimal conditions, it is accommodated by form, is not itself responsible for *all* of the meaning expressed by word-level units. In the absence of compatibility between form and functional meaning, form may be the source of grammatical meaning (e.g., aspect represented by [aorist] in Macedonian). Such meaning exists in addition to that reflecting usage. Its role in acquisition and change is an area for future inquiry.

Notes

¹We operate with this assumption for purposes of our discussion, but we have noted that the relationship of aorist to imperfect is disputed. Friedman 1977:190 summarizes existing opinions, and states his own that the imperfect is marked, thus agreeing with a number of, but not all, who have considered the issue. In this regard, it should be mentioned that his statement that "...It is possible for an aorist to be durative...but an imperfect may not be used for precise limitation", which is the strongest argument he advances in support of markedness for the imperfect, is not obvious from the examples he cites (1977:29). The examples of aorists in contexts claimed to be durative are from Koneski 1967:423-424, but an examination of the source reveals that there is no comment on the meaning of the relevant sentences, the implication being that aorists in them are functioning in the normal (i.e., nondurative) way. This interpretation seems to be supported when, several pages later (1967:427), in his discussion of the imperfect, Koneski reconsiders two of his examples, substitutes imperfect forms for aorist, and, for the first time, comments on meaning:

Ako go zememe primerot: *A, ne treba, Boško, dosta pive...*, togaš vo samata forma *pive* se sodrži eden znak za "zaoblenosta" na dejstvoto, za negovoto obgrnuвање. Neka ja zamestíme taa forma so formata na nesvršeno vreme: *A, ne treba, Boško, dosta pive...*, i ke vidíme deka ova *pive* ni ja pobuduva pretstavata za samiot prodolžitelen tek na glagolskoto dejstvo, za negovoto odiвање, a ne za negovata zaokruglenost. Istoto toa ke ni go pokaže i sledniot primer...

translation: If we take the example, "*Oh, don't Boško, we've drunk enough...*", (we see that) in the very form *pive* (i.e., an imperfective aorist, MJE) there is an indication of the "summed-up" quality of the action, of its being embraced. Let us replace this form with the imperfect: "*Oh, don't, Boško, we've been drinking enough...*", and we (will) see that *pive* (i.e., the imperfect of the verb in question, MJE) gives us an image of the ongoing course of the action, of its process, and not of its summing up. The following example shows the same thing...

Since the sentences cited by Friedman (i.e., *Go drža tamo cel tri dni i tri noći* 'They held him there for all of three days and three nights.' and *Ne babata Gudjakovka od Bitolišča i baja* 'No, Grandma Gudjakovka from Bitolišča exorcised her.') are part of the group from which *A, ne treba, Boško, dosta pive* is taken, but elicit no special comment from Koneski, we find no evidence to support Friedman's

statement that they show '...imperfect aorists can be used for durative contexts', not, at least, without imparting the meaning traditionally associated with aorist forms. Nor does he offer adequate evidence to support his claim that the imperfect cannot be used for precise limitation. The example he cites in this regard (i.e., the ungrammatical **Ja radjah dva sata*. 'I was working during two hours. '; 1977:28) is from Serbo-Croatian, and therefore not of direct relevance in an analysis of Macedonian.

²In principle, it could be claimed that the present and imperative formed a unity on the basis of shared grammatical meaning, either [-past] or [+nonpast]. But there is no corroboration of any sort for this interpretation. It is true that grammatical meaning has been relevant paradigmatically (e.g., in the units we have termed *formations* and *paradigms*), but, in such instances, it has typically led to formal unification (i.e., elimination of realizational differences; e.g., in the terminal suffix of the past; in the terminal suffix of the participle). However, grammatically defined paradigms within formal unities have typically remained distinct (e.g., the nonpersonal formations in the consonantal subsystem). This was true of the present and imperative as well, which supports a formal basis for their unity.

³The paradigmatic potential of formal attributes has generally not been ignored in the classification of stem-level units, but only word-level. Thus, in descriptions of Slavic verbal systems, (e.g., Jakobson 1984), it is not unusual to find classifications of verbal stems which make reference to constituent structure (i.e., the presence versus absence of certain constituents) and the realization of constituents. In this study of Macedonian, we have assumed relevance for presence versus absence of the extender and suffixal root-qualifier in the classification of stems. We have further assumed that, if the suffixal root-qualifier occurs, its realization is relevant.

The implicit assumption that word-level units are properly classified only on the basis of meaning probably has its origin in the well-established framework of classification inherited from Greek and Roman grammarians, who were concerned only with meaning as a basis for organization.

⁴Nevertheless, in his study of *zero* (i.e., 1984:151-160), Jakobson makes clear that he is aware of the issue which concerns us. Referring to gender in Russian, he writes:

...we are face to face with a clear chiasmus: the forms with zero morphological function (of the type *suprúga* [i.e., forms with terminal *a*, which occurs in masculine nouns as well as feminine, MJE]) denote the gender with a positive meaning (feminine) and, on the other hand, the forms with a positive morphological function (of the type *suprúg* [i.e., forms with zero,

which is restricted to masculine nouns, MJE)) specify the gender with zero meaning (masculine).

He does not, however, consider the consequences of his findings.

⁵In this regard, it should be mentioned that, in our discussion of the evolution of new imperfect forms (see 3:1.2.1), we referred to the markedness of aorist forms in a functional sense as motivation, claiming that contextual restriction of aorist forms was responsible for the appearance of unmarked forms to complement them. We were assuming that markedness for the aorist was a reflection of usage. Should those who claim markedness for the imperfect be correct, we would merely assume that the appearance of unmarked forms was a consequence of markedness in a formal sense (i.e., the restriction of *a*, *i*, *o*, and the absence of a vowel to aorist forms).

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